JANUARY 1961

# CURRENT

*THE SIGNIFICANT NEW MATERIAL*

*FROM ALL SOURCES*

*ON THE FRONTIER PROBLEMS OF TODAY*

# TO THE NEW READER

In the body of the magazine, all material to the right of the vertical rule is either direct quotation from or objective summary of the words of the author named in the margin.

The source is stated at the end of each item. For readers who would like to obtain full texts or subscribe to publications quoted, all sources are recapitulated in an alphabetical list which includes addresses, frequency of publication, single copy and subscription costs. This list begins on page 2.

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### CURRENT'S DEFINITIONS

FRONTIER PROBLEMS are basic in the sense that they seriously affect our democratic way of life, relevant in the sense that they take into account new knowledge in the physical and social sciences, open in the sense that they involve unanswered questions.

SIGNIFICANT NEW MATERIAL contains new information or new ideas or comes from an unexpected source or provides a better way of saying something.

### CURRENT'S SOURCES

Current's sources of material are all-inclusive. They cover general and special periodicals; academic journals and proceedings of learned societies; books, pamphlets and reports from commercial publishers, universities, foundations and funds, citizen organizations and special interest groups; daily and Sunday newspapers, especially editorials, columns and features; television and radio commentators, interviews, forums; government and intergovernment sources; statements of opinion leaders.

# CURRENT'S AFFAIRS

The new Administration in Washington will need all the new ideas it can find. The challenges it faces were unimaginable eight years ago.

The United States and its allies, for good or ill, can no longer dominate the world. We are not invincible militarily and our economic superiority is being challenged. Peace is indispensable because war is no longer a viable alternative. Economic well-being for all men has to be achieved because all men have heard about it. They've also heard about human dignity.

These imperatives obtain in a world of scientific advance so intricate and headlong that the scientists, who can't keep up with themselves, blame the humanists for not being able to keep up with them.

Never before has there been a greater need for significant new ideas on the frontier problems of the day.

We find evidence that the new Administration will try to meet the challenge. Our evidence could hardly be more parochial: Some men who may be prominent in the Administration have expressed ideas which we have found worth reporting in Current. We do not of course agree—or disagree—with these ideas, but they come from thinking and concerned citizens.

To get an inkling of how the Administration may be dealing with some of its problems our readers might look up Richard E. Neustadt's discussion of the President as an expert, July, page 59; the M.I.T.—W. W. Rostow study of the economic "take-off" in underdeveloped countries, June, page 44; Harlan Cleveland's analysis of overseas Americans, July, page 6; Senator Henry M. Jackson's discussion of mobilizing talent for government service, July, page 13; Arthur M. Schlesinger, Jr.'s allocation of economic resources, July, page 18; Senator Pat McNamara's program for the aging, August, page 21; Senator Joseph S. Clark's proposals on Federal taxing for local spending, August, page 25; John Kenneth Galbraith's challenge to the Left, September, page 26; Lyndon B. Johnson's program to meet the water shortage, September, page 55; the ideas about an American Youth Peace Corps, May, page 35, and December, page 55; Arthur J. Goldberg's scheme for industrial peace, November, page 49; Willard W. Cochrane's proposal for franchise farming, December, page 42.

We expect to watch these ideas to see how many of them emerge on the Administration's new frontiers. There is often, of course, a difference between thought and action, between opposition and responsibility. Men are certainly more likely to float new ideas when they are out of office. We therefore look forward to bringing our readers the new ideas that we hope will come from the new opposition.

SIDNEY HERTZBERG

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# THE CONTROL OF WAR

## PREREQUISITE FOR DISARMAMENT

*Author and military authority, Mr. Millis is now a staff member of the Center for the Study of Democratic Institutions.*

**Walter Millis**

"Given a desire by all the great powers to disarm, there would be nothing very complicated about disarming, but given the desire (now firmly retained by all the great powers) merely to reduce the threats and burdens of arms while clinging tenaciously to the simplicities, the supposed securities, and the opportunities of the war system, the problem becomes one which all the technical and intellectual expertise in the world is unlikely to resolve. It is not just difficult; like 'duplicating the cube,' it is impossible." ("The Peace Game," *Saturday Review*, Sept. 24, 1960)

*The former Secretary of the Air Force:*

**Thomas K. Finletter**

"Disarmament is not primarily a technical problem. The negotiations on the subject are, indeed, complicated and technical. But it is not the complexity that blocks an agreement; the trouble is that the negotiating parties have not made up their minds whether they do or do not want to reach an agreement. It may be that in the past one of the two sides has wanted to agree. We cannot know that because there never has been an agreement or anything approaching one to put this to the test. But we are sure that never have both sides at the same time wanted an agreement, because if they had there would have been one." (*Foreign Policy: The Next Phase*)

## CAN ARMS DETER AGGRESSION?

*Britain's Sir Stephen King-Hall is a proponent of unilateral nuclear disarmament.*

**Stephen King-Hall**

The sole purpose of nuclear forces is deterrence; if this fails, all is lost. Nuclear energy has thus turned the traditional policy of keeping one's advanced weapons secret upside down. If we want our deterrent to have its full effect we must make sure our enemy knows exactly how awful our weapons are. He must also be convinced of our willingness, in certain circumstances, to press the button.

But there is bound to be an element of doubt in the West's deterrent, since we have not decided and cannot decide where the button should be and who should press it in exactly what circumstances. Mr. Lester Pearson, former Canadian Minister of Foreign Affairs, is on record as saying that even to hold a conference among the Western powers to decide these questions would break up the NATO alliance. It is fantastic to suppose that the democratic states would or should agree to such decisions. Our potential enemy is, therefore, forced to guess what we would do. If he guesses wrong, all is lost.

Even if we presented the Soviet Union with an ultimatum: accept our terms on a specific situation (such as the perennial Berlin problem) or

full-scale nuclear war will ensue, how could they be sure we were not bluffing? Is it likely that all fifteen NATO countries would agree to carry out the threat? Russia might argue with much plausibility that it was most unlikely. And yet a deterrent that is not credible is not a deterrent. *(Common Sense in Defense)*

*Dr. Brown is professor of geochemistry at California Institute of Technology. Mr. Real is a consultant to the Center for the Study of Democratic Institutions.*

**Harrison Brown and James Real**

"It would appear that the United States is entering a period of several years during which our strategic force will not in itself be an effective deterrent to a first strike by the Soviet Union. During this period, if war does not break out, factors other than relative deterrence capabilities will have played a major role in its prevention. These factors may range from the strong desires of both East and West for peace to a conviction on the part of Soviet leaders that the U.S.S.R. can attain its political and economic objectives without recourse to violence. . . .

"The spread of nuclear military capabilities will almost certainly decrease the stability of deterrent systems. The greater the number of nations that possess the capability of launching a nuclear strike, the greater the probability that there will be a strike." (*Community of Fear*)

*M. Aron, a French sociologist, is the author of* France: Steadfast and Changing.

**Raymond Aron**

"The strategy of deterrence is essentially psychological. It aims at preventing an enemy state from taking the initiative of aggression. We try to predict an enemy's decision under given circumstances, and we are compelled to accept the hypothesis that he will act rationally. [But] can we determine with certainty what a rational behavior would be? Would it be rational, for instance, for the leaders of the Soviet Union to accept twenty million casualties in order to eliminate the military power of the United States? Would it be rational for the United States to accept fifty million casualties in order to save West Berlin? Can we be sure that our opponent will adopt the pattern of behavior that seems rational to us?

"This double uncertainty inevitably affects the conclusions of all so-called 'scientific' studies of the strategy of deterrence." ("The Future of Western Deterrent Power: A View from France," *Bulletin of the Atomic Scientists*, September 1960)

*A professor of international affairs at the Woodrow Wilson School, Princeton University, and author of* NATO and American Security:

**Klaus Knorr**

"Recent Soviet successes in the development of nuclear bombs, ballistic missiles, and earth satellites have raised doubts in Western Europe about the American ability, in the longer run, to check the military power of the Sino-Soviet Bloc; and it has been suggested in various quarters that the growth of Soviet retaliatory power makes it uncertain, if not improbable, that the United States would in the future protect its allies from nuclear blackmail or invasion by making a credible threat of massive destruction against the Soviet Union. . . .

"If this balance of terror applied generally, no country could be expected to protect an ally by a course of action inviting heavy destruction of its own cities and population. It is the logic of this argument that deterrence requires *national* retaliatory forces—such as SAC [Strategic Air Command] and British Bomber Command are for the United States and England. . . .

"This logic is not altogether compelling, for it is not necessarily consonant with reality. First, the United States surely has a considerable counterforce capability now, and though it seems likely at present that it will lose most of this capacity, this need not hold for the indefinite future.

"Second, even if the United States comes to possess no more than insubstantial counterforce capabilities, it is not clearly irrational for this country to threaten massive reprisals against Soviet cities in the event the U.S.S.R. attempts to subjugate Western Europe, or key areas in it, by invasion or nuclear blackmail. . . .

"Third, strategic reprisal need not be massive. Even the threat of limited nuclear war, of a less than massive blow, should give the U.S.S.R. serious concern.

"Fourth, even though it were irrational for the United States, without sufficient counterforce weapons, to follow up a threat of strategic retaliation by an attack on behalf of Western Europe, it is not certain that this country would respond rationally. On all these grounds, Soviet planners could not be sure of American inaction; some degree of deterrence will therefore be exerted in the future, and this degree may be enough to restrain Soviet aggression." ("The Future of Western Deterrent Power: A View from the United States," *Bulletin of the Atomic Scientists*, September 1960)

**Alastair Buchan**

*The director of the Institute for Strategic Studies in England, and author of* NATO in the 1960's:

It has become clear "that no other NATO power can fill the vacuum created by ineffectual or indecisive American leadership. As European NATO becomes economically richer and politically more dynamic, what one must look for is something more closely resembling collective leadership of the Alliance through a consortium of powers with the United States as *primus inter pares*, and this in turn must be reflected at the level of official planning. . . .

"There now seems to be less danger that NATO countries other than Britain and France will attempt to develop national nuclear deterrents despite the fact that six of them—Canada, West Germany, Italy, Holland, Belgium, Norway—all probably have the physical and scientific resources to do so. . . . The progress being made in the American missile program, notably the improvements in the performance of *Atlas* and the successful tests of *Polaris*, [has] created greater confidence in the continuing efficacy of the American strategic deterrent. What has had an even more important effect is the evidence of the vast costs involved in developing not just a national bomb, but an effective means of delivery. . . .

"A system of allied as opposed to national deterrence is by no means a perfect answer to the dilemma that now confronts NATO . . . [but it] is the best that is available to us. . . . Though a NATO deterrent may be slower in reaction than a collection of national ones, it would provide a higher degree of security than at present against the irresponsible use of power by any one member of the Alliance, and thus conform to the strategic reality of today—namely the need for stability. . . . It would be a measure of internal self-discipline within the body of the free nations which might do much to convince a skeptical adversary and a frightened world that it is possible to reach limited international agreements in this field without destroying the pattern of security." ("The Future of Western Deterrent Power: A View from the United Kingdom," *Bulletin of the Atomic Scientists*, September 1960)

**Finletter**

"A Deterrent Force cannot surely guarantee the peace, and I make two conclusions from that. One is that we must try with all the determination of which we are capable for a world disarmament agreement, for that may save us from nuclear war. The second is that we must build up our military strength greatly and thereby put off nuclear war for as long as we can, and thus buy time within which we can try to persuade ourselves and the world to give up this obsolete and horrible business of war." (*Foreign Policy: the Next Phase*)

## ARE LIMITED WARS POSSIBLE?

*The author of a special study for the National Planning Association:*

**Oliver D. Knauth**

"The reason it was possible to 'limit' the Korean War was because small tactical nuclear weapons had not been developed. Since Korea, the family of nuclear weapons has grown so rapidly it is difficult to distinguish between a large conventional weapon and a small nuclear one. As armed forces come to be equipped with a variety of small tactical nuclear weapons, the temptation for each belligerent to use a slightly larger weapon will be hard to resist. . . .

"Among nuclear powers, limited war has its weakness even as an instrument of policy because, to quote Paul Kecskemeti [*Strategic Surrender*, 1958], 'In dealing with the political problem of securing a settlement on the basis of partial nuclear operations, the winner must take into account the loser's ability to unleash a last orgy of destruction. . . . When it comes to setting terms, the possibility of a last explosion of despair must be counted as part of the loser's bargaining strength. . . . This implies that in nontotal war, the final political payoffs must be moderate.'" ("U.S. Foreign Policy in a Changing World," *Planning Pamphlet 110*, National Planning Association, September 1960)

**Brown and Real**

"It is difficult to visualize techniques of truly stabilizing limited wars in which nuclear weapons are used. Any limitation on size of explosive would be quite arbitrary and difficult to monitor. . . .

"We should recognize the likelihood that *any* future war that is of appreciable size will involve the use of nuclear weapons at some stage, no matter what disarmament controls have been in existence prior to the outbreak of war. Even were the nations of the world to carry out sucessfully a program of total nuclear disarmament, including the elimination of long-range missiles, the knowledge needed to manufacture such weapons would remain. Once a 'conventional' war broke out, there would almost certainly be a frantic race upon the part of the participants to manufacture the weapons once again. Each of the antagonists would realize that the first nation to produce megaton nuclear weapons in quantity, together with the means of delivering them, would have the opposing side at its mercy." (*Community of Fear*)

*Mr. Hitch is head of the economics division and Mr. McKean a staff research economist of The RAND Corporation.*

**Charles J. Hitch and Roland M. McKean**

"The emphasis of the advocates of limitation has been on the high rather than on the low end of the spectrum of weapons. They have talked in particular of nuclear limited wars on the assumption that nuclear weapons will favor the defender rather than the aggressor and that the West can depend on these to compensate for men and conventional arms. . . .

"The argument runs that the offense requires concentration and so the aggressor necessarily provides the defender with a lucrative atomic target. This ignores the fact that, in a delivered nuclear weapon itself, the offense has an enormous concentration of force. The use of nuclear weapons in limited wars might make it possible for the aggressor to eliminate the existing forces of the defender and to get the war over, reaching his limited objective before the defender or his allies can mobilize new forces. Like all-out nuclear war, it puts a premium on surprise and forces in being rather than on mobilization potential, which is the area in which the West has an advantage. . . .

"We are inclined to believe that most of those who rely on tactical nuclear weapons as a substitute for disparities in conventional forces have in general presupposed a cooperative Soviet attacker, one who did not use atomic weapons himself. . . . Here again is an instance of Western-preferred Soviet strategies, this time applied to limited war. Ironically, according to reports of Soviet tactical exercises, described in the last few years in the military newspaper *The Red Star,* atomic weapons are in general employed only by the Russians, the West apparently employing Soviet-preferred Western strategies. The symmetry of the optimism of East and West here could be quite deadly." (*The Economics of Defense in the Nuclear Age*)

**Finletter**

"We must not encourage the Russians and the Chinese to think they can safely wage a limited offensive war, either overtly or covertly. They should understand that these views about the acceptability of limited war are far from being official United States Government policy, and that the Communists will do well to continue with what I hope is their present point of view—of being quite unsure what might happen if they were to return to their former policy of war, whether all-out or limited, direct or indirect, overt or covert." (*Foreign Policy: The Next Phase*)

*The possibility of "limited war" is denied in* International Affairs, *the journal of the Soviet Society for the Popularization of Political and Scientific Knowledge.*

**I. Yermashov**

The new American doctrine of "limited" or "acceptable" war is designed to "safeguard American metropolitan territory from a nuclear counterblow, *yet, simultaneously, enable the United States to use war as an instrument of its policy.*" It would aggravate world tension, "thereby driving upwards the curve of military appropriations and arms deliveries." It would restore the balance between the Air Force and Rockefeller interests on one side, and the Army and Navy and "the House of Morgan and its allies from the DuPont empire, which jointly control the key centers of the steel industry and the manufacture of the latest types of 'conventional' arms," on the other. It also appeals to the German tycoons.

This doctrine, an attempt to escape the theory of "the nuclear blind alley" or balance of terror, would rule out all "strategic weapons" but not short-range rockets and "tactical" atomic weapons. "Other restrictions rule out the bombardment of cities, industrial plants, and communication arteries, and the use of airfields for raids deep into the enemy rear. . . . Just one thing is unclear. How to secure observance of these rules and regulations, even if we assume that all states put their signatures to them?

"Vain apprehensions, say the authors of the 'new doctrine.' They have taken care of everything. To begin with, diplomatic relations between the belligerents must be left intact! No one had ever thought of this

'wonder' before. . . . But that is not all. In order that both sides shall play the game fairly the belligerents submit to inspection. The inspectors see to it that the adversaries do not shower each other's rear with nuclear bombs and that they do not apply any of the 'forbidden holds' just as the referee does in the boxing ring. . . . Last but not least, the rules and regulations provide for breaks in the hostilities at regular intervals for establishing 'political contacts,' meant evidently for the purpose of sounding out possible cease-fire and peace terms. . . .

"It is a specious doctrine, based on the false assumption that so complex and cruel a phenomenon as war may be governed by a set of rules and regulations and that it can be placed within a legal framework similar to that governing, say, commerce."

The Senate Foreign Relations Committee, in its recent report, "Developments in Military Technology and Their Impact on United States Strategy and Foreign Policy," "had not the slightest intention of refuting the 'new doctrine.' Their purpose was different. What they wanted was to emphasize the importance of nuclear weapons and so back up the interests of the major monopolies. But by putting forward the sound idea that there is no distinct line between tactical and strategic nuclear weapons, and by stating that a 'small' nuclear war may rapidly become a 'big' one, they invalidated the whole theory of rule-making, which is really nothing more than pure bluff. . . .

"What the learned flunkeys of the American and German imperialists call 'small' or 'limited' wars are actually . . . *worldwide nuclear wars only camouflaged by means of a different, less 'terrifying' label.* Wherever the nuclear explosion occurs—in the 'local' tactical or 'universal' strategic theatre of operations—it will be the starting signal for a worldwide nuclear holocaust. . . .

"The only real way to secure lasting peace on earth is to destroy all armaments, scrap all existing stockpiles of atomic and hydrogen weapons, and bury the concept of war once and for all." ("The Doctrine of 'Acceptable War'—Illusions and Reality," *International Affairs,* November 1960)

## HOW TO PREVENT ACCIDENTAL WARS

**Brown and Real**

"One can conceive of a number of ways in which a nuclear war might start accidentally. Radar evidence might be misinterpreted and under the misconception that an attack had been launched by one country a retaliatory attack might be launched by the other. Reconnaissance flights carried out by one nation over or near the territory of another might be construed as acts of war and might lead to the launching of a first strike against air or missile bases. An American pilot might, as a result of strain during a period of tension, bomb a Soviet city. The reverse situation is also conceivable—and were New York suddenly demolished, there is little question that with our present organization and philosophy we would retaliate quickly and vigorously. When we are fully in the age of missiles we must reckon particularly with the possibility of serious accident, largely because the time for decision will be so short. . . .

"The possibility of military action (not necessarily of the button-pushing kinds) being undertaken *in camera* by a small group of officers, either American or Russian, grows as the number of ways in which politicians' ultimatums can be violated increases. As crisis compounds crisis, from Cuba to the Congo, the probability of misjudgment, accident, or precipitous military action is vastly increased. . . .

"As the Russian military position becomes more clearly dominant in the next decade, and as increasing psychological pressure is brought to bear on the Western positions everywhere, the likelihood of desperate, erratic, unauthorized action by U.S. and Allied forces is much greater than the chance of similar breaches of discipline by the Soviets. For one thing, the Soviet political and military policies are one policy, responsive only to the master plan of action—whatever it may be. For another, the Soviets have a polished method at hand for 'violation by proxy'—the calculated use of dominated or threatened powers to perform acts of belligerence which the U.S.S.R. may disclaim. The U. S.-NATO alliance, on the other hand, is hampered operationally by political differences, exposure inequities, geographic awkwardness which complicates logistic and communication problems, and to some extent, language difficulties." (*Community of Fear*)

*Professor Schelling, an associate of the Center for International Affairs at Harvard University, is a former staff member of The RAND Corporation.*

**Thomas C. Schelling**

"Accidents do not cause war. *Decisions* cause war. Accidents can trigger decisions; and this may be all that anybody meant. But the distinction needs to be made, because the remedy is not just preventing accidents but constraining decisions.

"If we think of the decisions as well as the accidents we can see that accidental war, like premeditated war, is subject to 'deterrence.' Deterrence, it is usually said, is aimed at the rational calculator in full control of his faculties and his forces; accidents may trigger war in spite of deterrence. But it is really better to consider accidental war as *the* deterrence problem, not a separate one.

"We want to deter an enemy decision to attack us—not only a cool-headed, premeditated decision that might be taken in the normal course of the Cold War, at a time when Russia does not consider an attack by us to be imminent, but also a nervous, hot-headed, frightened, desperate decision that might be precipitated at the peak of a crisis, that might result from an accident or false alarm, that might be engineered by somebody's mischief—a decision taken at a moment when sudden attack by the United States is believed a live possibility.

"Either way it takes a decision to initiate war. The difference is in the speed of decision, the information and misinformation available, and the enemy's expectations about what happens if he waits. He must have some notion of how much he would suffer and lose in a war that he starts, and of how much more he would suffer and lose in a war that, by hesitating, he fails to start in time. And he must have some notion of how probable it is that war will come sooner or later in spite of our best efforts, and his, to avert it. In deciding whether to initiate war the enemy is aware not only of retaliation but of the likelihood and consequences of a war that he does not start. Deterring premeditated war and deterring 'accidental war' differ in those expectations—in what the enemy thinks, at the moment he makes his decision, of the likelihood that if he abstains we won't.

"Accidental war therefore puts an added burden on deterrence. It is not enough to make a war that he starts look unattractive compared with no war at all; a war that he starts must look unattractive even as insurance against the much worse war that—in a crisis, or after an accident, or due to some mischief—he thinks may be started against him. We have to make it never appear conservative to elect the lesser danger of 'pre-emptive' war." ("Meteors, Mischief, and War," *Bulletin of the Atomic Scientists*, September 1960)

**Schelling**

Although the U. S. has been unwilling to admit it officially, perhaps for fear of public opinion at home and abroad, unpremeditated war, inadvertent or accidental war, or war resulting from build-up of tensions in a crisis of some sort is a significant possibility. The recognized importance of striking first makes it likely that such a crisis would develop extremely suddenly.

It is, therefore, worth thinking about discussing with the U.S.S.R. "the establishment (for each of us separately, and perhaps for other countries) of a *Special Surveillance Force*. Its function would be to observe the enemy's behavior, at the enemy's invitation, and to report home instantly through authentic channels. . . .

"The special feature of such a force would be its readiness, through advance preparation, to take advantage of motives and political circumstances as they might be in a sudden crisis, rather than as they are during the normal ups and downs of the Cold War. It should be prepared to do, with the sudden acquiescence of the enemy (host), things that the latter might never dream of permitting except in extraordinary circumstances, when some kind of arms control—even if only a temporary monitoring of some synchronized withdrawal or relaxation—becomes urgently required as an alternative to war or to the rapid deterioration of a strategic crisis. The attributes of the force should be readiness, speed, reliability, self-sufficiency, versatility, and ability to improvise."

Our force, for example, would not be designed to uncover secret Russian war plans, nor to secure information Russia was trying to conceal. It would have a much simpler assignment: to enable the Russians to "prove to our complete satisfaction the truth about something they are doing, when in fact they are doing it and badly want us to know it," so that we will not feel forced to strike first. If we had reason to believe that Russian cities were being evacuated, or that certain Russian submarines had been sent to strategic attack points, or that the Russian Government had gone on a sustained airborne alert, and none of these things were in fact true, our surveillance force would be able to discover and report the truth if the Russians wanted them to. Without such a force, well-trained and properly placed, it might be impossible for the Russians to establish the truth.

Crises could quite possibly arise in which the only way out would be a crash scheme of mutual disarmament, arms restraint, or withdrawal and tranquilization. "Both sides would require *positive evidence* of compliance, rather than just an absence of evidence that the other is cheating. In these contingencies the inspectors would not look for evidence about what the other side was not doing; they would demand to see what it *was* doing." Again, without such a force in being, it might be impossible to give such schemes serious consideration, and a war that neither side desired would be the only possible outcome. ("Arms Control: Proposal for a Special Surveillance Force," *World Politics*, October 1960)

**Hitch and McKean**

"We might establish a way for either nation to clear up ambiguity *if it wishes to do so*. Suppose there is an accidental nuclear explosion in one country or, during a local war, a large group of bombers is sent out to deliver small nuclear or conventional bombs. Each side will be fearful of a pre-emptive strike by the other and for that reason may itself consider a pre-emptive strike. Anxiety will mount rapidly. A quick decision will have to be made. In this situation each side may desperately want to convey to the other that it had, or has, no intention of attacking.

"We need some means for the nation initiating the provocative incident

to prove quickly that it is not planning a surprise attack. Or a way for both nations to prove simultaneously that they are not launching attacks. Mere assertions will not be enough, but parading corroborative evidence before inspectors or radar or television cameras may be reassuring. To be sure, proof will become increasingly difficult when striking forces consist largely of missiles, but this is all the more reason for hard thinking about a *modus operandi* for situations of this sort." (*The Economics of Defense in the Nuclear Age*)

## THE NEW MUNITIONS MAKERS

**Brown and Real**

"Tens of thousands of scientists and technicians have devoted all of their professional lives to the invention and construction of weapons. A majority of those who went to work *after* World War II are convinced that weaponry is a way of life for themselves and expect the U. S.-Soviet contest to continue forever. Many of them are articulate and highly valued consultants in every walk of American life, from the Congressional Committee to the P.T.A.

"Although these men are not generally openly political, they are in every sense the paramilitary-civilian soldiers. They have spent most of their adult lives in the direct or secondary employment of one or another of the services, and their sympathy for and concurrence with their uniformed colleagues are often marked and open. Should a showdown between the military and the civilian sectors occur, this group could be relied upon to staunchly back the handlers of the weapons they have so devotedly evolved.

"The military leaders themselves are quite naturally not enthusiastic for disarmament or for any steps that might curtail the freedom of action of the armed services. There is rather clearly a military elite emerging in the United States which is dedicated to a position of perpetual hostility towards the Soviet Union and which wields enormous political as well as military power." (*Community of Fear*)

## CAN WE AFFORD DISARMAMENT?

**Brown and Real**

"If the expenditure on weapons systems increased during the next five years at the same rate as it has during the last five, even allowing the 5 per cent annual GNP increase, the use of the Keynesian multiplier would indicate that close to 50 per cent of the total of U. S. production and business in 1965 may be directly or indirectly war goods and services.

"At what point will this kind of economic dependence become so crucial that it cannot be substantially reduced without grave harm to the basic economic structure? It may well be that the time has already come.

"The elements and conditions reinforcing the war economy are many. Real, justified fear of the mysterious Soviet juggernaut is held by most of the people in one way or another. Substantial disarmament now, or at any foreseeable time ahead, seems emotionally (and, therefore, practically) impossible. On the contrary, the psychology of fear promises to increase to the point where substantial personal economic sacrifices could be asked of the people—and given willingly, if the alternative parades as military vulnerability. Even a full-scale depression would undoubtedly be largely blamed on Soviet actions and pressures. It is conceivable that the public reaction would be similar to that displayed after Pearl Harbor. The butter is more likely to disappear than the guns." (*Community of Fear*)

**Walter Millis**

"About 10 per cent of American production and employment is generated directly by the requirements of the war system. The generation of this substantial fraction of total goods and services is an internal function of war which, in a warless world, would have to be fulfilled in some way. . . .

"The conversion over some relatively short period of a tenth of the national economy to other forms of production would, it seems reasonable to infer, have to be managed by the development of more rational and perhaps more authoritarian agencies for the allocation of capital investment, material supplies, and manpower than we now possess. This would in turn raise presumably difficult problems of conflicts of interest and political power. One may well doubt the adequacy of our existing democratic political institutions and processes to deal with them; one must therefore contemplate the possibility of institutional changes in both the economic and the political field in directions which to many today would seem highly undesirable." ("The Peace Game," *Saturday Review*, Sept. 24, 1960)

## DEFENDING THE CIVILIAN

**Brown and Real**

"If the arms race continues, as it probably will, its future pattern seems clear in broad outline. As a result of the emergence of the current tremendous capabilities for killing and destroying, programs will be started aimed at the evacuation of cities, the construction of fall-out shelters in regions outside the major metropolitan areas, and the construction of limited underground shelters. Increased offensive capabilities will then emerge which will to some extent neutralize these efforts. . . .

"The new developments will cause people to burrow more deeply into the ground. Factories will be built in caves, as will apartment houses and stores. Eventually most human life will be underground, confronted by arsenals capable of destroying all life over the land areas of the earth. Deep under the ground people will be relatively safe—at least until such time as we learn to make explosives capable of pulverizing the earth to great depths. . . .

"The Soviet Union has apparently, in the last few years, instituted a civilian defense program of substantial magnitude. It is probable that within the next two or three years the United States will embark on a crash shelter program for a large proportion of its citizens and some of its industry. Once the shelter program is under way, it will constitute a significant retreat from the idea of the obsolescence of war.

"Once the people are convinced that they can survive the present state of the art of killing, a broad and significant new habit pattern will have been introduced and accepted, one grotesquely different from any we have known for thousands of years—that of adjusting ourselves to the idea of living in holes. From that time onward it will be simple to adjust ourselves to living in *deeper* holes." (*Community of Fear*)

*The military correspondent of* The Baltimore Sun:

**Mark S. Watson**

"The certainty of this wholly passive operation has in it a genuine deterrent effect. For an enemy attack is decided upon only after calculation of the damage it will inflict. The damage includes lives. If a proper Civil Defense is believed able to save half the lives in an impact area, the immediate damage in that respect would be reduced one-half, and the enemy calculations would be adjusted accordingly." ("The U. S. and Armaments," *Headline Series 143*, Foreign Policy Association, September-October 1960)

## THE DOLLAR AS PART OF NATIONAL POLICY

*The Paul M. Warburg professor of economics at Harvard University discusses the ongoing drain on the dollar resulting from the U. S. adverse balance of payments.*

**John Kenneth Galbraith**

"For most of our history the dollar has been a currency of rare strength derived from an often uncomfortable scarcity. . . . In the last ten years things have changed dramatically." Last year we had a net deficit of $3.8 billions in our balance of payments. "This was the most recent in a long series of such deficits. The cumulative result is formidable. At the end of 1952 the gold stock less foreign dollar holdings totaled $11.5 billions; by June of this year the gold stock less the liquid dollar holdings of foreigners was minus $3.3 billions. This was a net deterioration over the seven and a half years of $14.87 billions."

These figures somewhat exaggerate the problem. Long-term capital exports are among the items contributing to the imbalance. This means that the short-term claims on the dollar are partially offset by long-term claims on other countries. And this year our exports of goods and services are up slightly. But the deficit will again be very large.

"These deficits cannot continue. Were they to do so they would establish a top-heavy volume of claims against our economy—one which . . . could cause serious complications here at home and gravely undermine our ability to sustain our payments abroad. . . . On our ability to make such payments our foreign position and policy depend. Our foreign policy has always depended less on the skill of our diplomats than on our ability to back it, as needed, with money.

"The solution is one that to a remarkable degree unites what we have hitherto considered diverse and separate aspects of our national policy. Military strategy is obviously involved, for different deployments of our forces will have substantially differing effects on our dollar outlays abroad. So is our policy on military aid. So also is our policy on economic assistance, and our ability to negotiate access to overseas markets. But this is not a problem that begins or ends at the water's edge. No line divides foreign and domestic policy. Our ability to sell abroad, or to meet foreign competition here at home, depends on our ability to control inflation, and on the stability in underlying wages and prices, and on our rate of technological advance, and even on the nature of our farm policy. Almost every aspect of our economic policy is involved.

"It is central to our strategy that we expand our exports and . . . see that our products are competitive in our own markets. We cannot accomplish the latter by restricting imports; that will only bring retaliatory action against the exports we must have. But we can and must look to our costs. Thus the competitive ability of an industrial company depends, among other things, on an efficient and low-cost supply of steel. In recent years our steel prices have become uncompetitive. As a result, in steel and steel products, we have been losing out in [overseas] markets, and even here

at home. And high steel prices have weakened our position on other products—as recent studies of the Joint Economic Committee have shown. So the dollar problem is closely involved with price- and wage-making in the steel industry. . . .

**International management of money**

"More generally the constant upward thrust of our industrial prices is no longer a purely domestic issue. The country that leads the inflation parade, as we have in a number of important industrial prices in these last years, keeps itself at a constant competitive disadvantage. For the future, we must make sure that we lag, not lead. Again, our past competitive position has depended on a high rate of technological innovation and advance. This is now a factor in our international position . . . especially [since] much of the industrial plant of Western Europe is new and modern. So is that of Japan. And so, one may add, is that of Russia. Here the balance of payments problem leads on to encouragement to plant modernization and technological advance and to tax policy. I would hope, incidentally, that it might be possible to have a serious discussion of such encouragement without stimulating a raft of new and imaginative suggestions for pure tax avoidance.

"Our dollar position extends to our farm policy for, while some of our industry is running into competitive difficulty in foreign markets, our leadership in agricultural efficiency is still unchallenged. We ought not sacrifice this advantage by a system of price supports that prices us out of overseas markets. There are ways of supporting farm income—for example the techniques employed now for sugar and wool—which do not do so. The choice is no longer a purely domestic matter.

"Finally, one need hardly say, our monetary policy is related to the dollar problem. As a considerable holder of what amounts to demand deposits, we must behave in a manner designed to inspire the confidence of depositors. This does not mean, as I imagine some may have hoped, that our interest rates must always be higher than those of any other country. It does require that we move our interest rates in reasonable concert with others, and a measure of common management in monetary policy must now be a prime goal of the major industrial powers. There are surely few matters on which we have more to gain by intelligent cooperation. Needless to say, we must exclude all talk about devaluation. It is not, in fact, a remedy that survives any serious thought. . . .

"Let me conclude with two final observations. One item in our balance of payments which is certain to come in for special scrutiny is foreign economic aid. It is not a large item; among the great aggregates with which we are dealing, it is rather small. But, as there is an old view that the budget of the United States Government can best be balanced by saving money on the Bureau of Labor Statistics, so economic aid will always present itself to some as the outstanding candidate for economy in overseas expenditures.

**A central agency for overseas spending**

"I would hope that this tendency might be resisted. This aid remains our greatest initiative in postwar foreign policy. It is fundamental for our esteem, and maybe also for self-esteem. It unquestionably should be shared —as it has been and will be. But nothing could so damage us the world around as a policy that sought to sustain our military power at the expense of efforts to aid the poor people of the poor lands. . . .

"Finally, one is tempted to wonder if a determined and effective solution of the dollar problem—and we can settle for nothing less—won't require some new public arrangements. At the present time a great many different agencies of government are spending dollars abroad. Even more have an

effect on those we earn. These expenditures and receipts, now not less than domestic outlays and taxes, are magnitudes we must watch. Until thirty years ago the responsibility for Federal expenditures was diffused among the Executive agencies. Each dealt independently with the Congress. Responsibility and overall control [were] won only by concentrating authority over these expenditures in the Director of the Budget. Perhaps the day is not distant when we must think, if not in similar, at least in analogous terms about our foreign resources. These, too, must be husbanded and used with maximum effect.

"We must, it is certain, have a single and authoritative view of our prospective revenues and outlays—one that will cause us to weigh priorities among the latter. This would seem to me the minimum course of prudence and caution." (Address, Annual Meeting, American Association of Land-Grant Colleges and State Universities, Washington, D. C., Nov. 16, 1960)

## THE JOB AS A PROPERTY RIGHT

*The former director of the Engineering Department, International Ladies' Garment Workers' Union, now a professor of industrial engineering at the Wharton School of Finance and Commerce, discusses the implications of a recent agreement between the West Coast Longshoremen's Union and the Pacific Maritime Association.*

**William Gomberg**

To pave the way for the introduction of labor-saving devices for dockside loading, Harry Bridges, president of the International Longshoremen's and Warehousemen's Union, and Paul St. Sure of the Pacific Maritime Association worked out an agreement for an employer-financed fund that will compensate longshoremen who lose jobs as a result of the new techniques. The union, for its part, has agreed not to stand in the way of further mechanization of cargo handling.

The fund, financed by a $5-million annual payment from longshore employers, will make supplementary wage payments for lost job opportunities for all presently registered longshoremen and clerks, minus the normal attrition. In other words, "it will finance what amounts to a guaranteed annual wage payment plan for the remaining labor force."

In addition, the fund will pay for the early retirement of longshoremen who have twenty-five years service. Such workers can retire voluntarily and receive $220 a month until social security payments begin. Workers who reach the age of 62 and have twenty-two years of service must retire. They will get $320 a month until social security payments start. These provisions, it is believed, will ease the pressure for jobs on the Pacific waterfront.

In exchange, "the employers have bought back practically all the work rules tending to retard the introduction of labor-saving devices. . . .

"The significance of this agreement is the rational way it treats the problem of worker displacement by the frank recognition of the workers' property right in his job."

An analogous recognition is made in the new severance pay program of the International Ladies' Garment Workers' Union. The union is seeking an employer-financed fund that will make payments to workers in the event an individual employer goes out of business.

"Hitherto, it has been taken for granted that a liquidating enterprise had only two responsibilities: for its liabilities to the bondholders, and for its equities to the stockholders. Now a new property interest is established:

the enterprise also becomes responsible for the property loss of its workers. In other words, a basis for assessing the property value of a job begins to emerge when we think in terms of capitalizing the earning power of the job of which its holder is deprived.

"The signing of the Bridges-St. Sure agreement marks employer acceptance of this basic idea. Hitherto, practically all discussions of work-rule problems have proceeded upon a set of assumptions implicitly accepted by both sides. Management has implied that it is entitled to a level of worker effort just short of the worker's physiological and psychological limits. The trade unions never openly rebelled against this concept; rather, adapting their arguments to it, they usually couched discussion about rules in terms of health and safety. If the problem of unemployment through technological displacement was raised at all, it was never in terms of work rules, but in terms of reducing the number of working hours and raising the hourly pay. Health and safety became a game which both parties played. The employers would express righteous indignation that health and safety were gimmicks seized upon to disguise 'make work' rules. The workers doggedly would continue to try to assert an emerging property right which they seldom acknowledged even to themselves. The rituals of our society were not yet ready to accommodate this job-property concept; and so, conservatively, the workers sought to attain their objectives by complying with the conventional rituals. . . .

"The Bridges-St. Sure pattern answers some important questions, but it leaves unanswered the most important one of all: How can a rising population continue to share in an economy when the number of jobs upon which it must depend seems to be steadily going down? . . .

"The problem of automation cannot be answered by the labor movement alone, and perhaps it is a tribute to their good sense that they recognize the fact. Meanwhile, they are striving to take care of their own." ("The Job as Property," *The Nation,* Nov. 26, 1960)

## LABOR AS AN INDUSTRY PROMOTER

*The director of research for the Textile Workers Union of America suggests labor participation is essential for revitalizing industry.*

**Solomon Barkin**

The trade union movement has a major responsibility for doing something about revitalizing the machinery of industrial relations. "The movement itself has lost its dynamism. It has stopped growing. Its outlook is, for the most part, too narrow to meet present challenges. If organized labor is to regenerate itself and better serve American society, it must formulate a new agenda of goals."

One such goal is "a program of industrial redevelopment councils with representatives from management and labor and knowledgeable outside authorities. These councils would mobilize whole industries to find new markets and products and increase their productivity.

"By participating in the program, the unions would face up to the need for industrial change and do their part to promote, not resist it. They could then bring home to their members a better understanding of the realities of the economic problems and a reassurance that change, with proper safeguards, would bring more, not fewer, job opportunities. The work of the redevelopment councils would thus lay the foundation for cooperative efforts at the local bargaining table." ("A New Agenda for Labor," *Fortune,* November 1960)

# DEALING WITH THE NEW NATIONS

## UNDERSTANDING OR EXALTING?

*Mr. Kissinger is a faculty member of the staff of the Center for International Affairs at Harvard and author of the forthcoming* The Necessity for Choice: Prospects of American Foreign Policy.

**Henry A. Kissinger**

"The problems new nations face in political and economic development are difficult enough in their own right. But they are further complicated by the fact that the new nations find themselves drawn into international affairs to an unprecedented degree. While building governments and seeking to realize the most elementary aspirations of their people, they are constantly being wooed, asked to make judgments or to assume responsibilities for which they are, in most cases, thoroughly unprepared.

"Our own approach to the new nations has not helped matters. . . . The United States has been going from one extreme to the other. For a time we acted as if the only political significance of the new nations was as potential military allies; neutrality was condemned and great efforts were made to induce new nations to join security pacts. Within a few years this policy has been replaced by its exact opposite. . . .

"The oversimplification that could see no political role for the new nations except as members of security pacts has been replaced by another oversimplification based on the premise that the 'real' contest is for the allegiance of the uncommitted. We sometimes act as if we were engaged in a debate with the Communists in a sort of Oxford Union where the uncommitted or neutral nations act as moderators and award a prize after hearing all arguments.

"We must ask ourselves, however, whether the new exaltation of noncommitment is not just as dangerous as the previous emphasis on alliance-building, and whether there is not an inconsistency between the desire of the new nations to be neutrals and their desire to be arbiters.

"To begin with, there is a certain ambivalence, if not disingenuousness, in the sudden deference now being paid to neutrality. The principal difference between the Dulles approach to the new nations and that which urges America 'to respect neutrality' often seems to be merely one of method. Both policies are designed to bring the new nations somehow to our side. Secretary Dulles thought the way to do this was to castigate their neutralism. Many of those who see in the new countries the arbiters of international relations imply that the way to win their friendship is to respect their desire for noninvolvement. Both assumptions are based on an illusion.

"For it is extremely doubtful whether, on many of the most important issues dividing the world, *any* policy can win the support of the uncommitted. A number of Americans seem to assume that the reluctance of the new nations to commit themselves is due in large part to our failure to 'present our case properly' or to the fact that the new nations have certain positive views that we have failed to take into account. But this line of reasoning itself fails to take into account the fact that on most international

issues, except those affecting them most directly, the new nations will invariably take a position somewhere between the contenders, regardless of their view of the intrinsic merit of a given dispute. To the new nations, neutrality seems more important than the issues involved in any particular dispute because both their image of themselves and their bargaining position depend on maintaining that neutrality. . . .

"The United States, of all countries, should be able to understand this state of mind. . . . A grave problem arises when the laudable view that we should understand and *accept* their desire to maintain neutrality is transformed into an *exaltation* of noncommitment. Although it would probably have been wise to have avoided such groupings as SEATO (Southeast Asia Treaty Organization), it is surely going too far to seem to pay greater attention to neutrals than to allies. The realization that we should not press the new nations to join alliances should not be carried to the extreme of discouraging those who have made a different choice. When noncommitment becomes a cult, slogans such as 'appealing to world opinion' can easily turn into excuses for inaction or irresponsibility.

"The new nations will take a stand against dangers that they fear will affect them. But they are not apt to take a stand on problems that seem to them far away. The Chinese brutality in Tibet made an impression in India; the equally brutal Soviet repression in Hungary did not. . . .

"To be sure, the new nations sometimes create the opposite impression because their own attitude toward noncommitment is at least as ambivalent as ours. All too often, they couple insistence on respect for their neutrality with an attempt to play the arbiter's role in international affairs. But the arbiter's role implies that they will support one of the parties if they can be convinced of the correctness of its position. It is an invitation to a courtship that encourages the very pressure which is said to be resented.

**Temptations of the international stage**

"Many of the leaders of the new states are flattered by the rewards that fall to the uncommitted in the competition of the major powers. For many of them, playing a role on the international scene seems not only more dramatic but also much simpler than the complex jobs they face at home. Almost all of their domestic problems require patient, detailed efforts, and the results are frequently long delayed. Domestically, each action has a price. But on the international scene, it is possible to be the center of attention simply by striking a pose. Ambitious men can thus play the dramatic role that is often denied to them at home, or they can use foreign policy as a means to solidify their claim to national leadership.

"Unfortunately, the same factors that make the international arena so tempting—being wooed, escaping from intractable domestic problems—also militate against the seriousness of the effort. It is the symbolic quality of international forums that is most attractive to many of the leaders of the new nations, as we have seen in the opening weeks of the present session of the UN General Assembly. The opportunity was welcomed to declaim general maxims that never seem to apply quite so simply at home or to the issues of foreign policy in which an uncommitted nation is directly concerned. But these same nations are much less willing to assume substantive responsibilities, particularly in areas not directly related to their immediate interests.

"If the new nations are encouraged to arbitrate all disputes, the impact on international relations will be demoralizing. Noncommitment will thereby defeat its own object. It will be merely another reason for occupying a place at the center of all disputes. . . .

"We must recognize that on many of the most difficult international

problems there is no such thing as a meaningful world opinion. And it is simply asking too much of the new nations, which have barely achieved independence, to help settle such technically complex disputes as that over disarmament.

"The argument has often been heard that one of the obstacles to a wise United States policy on arms control is the absence of adequate technical studies. Yet our sophistication in this field is incomparably greater than that of any new nations, most of which do not have even one person studying the problem full time. They have no modern weapons arsenal of their own to give them an understanding of strategic problems. They have no technical staffs to study the subject. What they do have is a volatile public opinion at home. In these circumstances, the new nations can easily fall prey to Soviet slogans which sound attractive but which in fact are disguised efforts to disarm the West. The uncommitted are in no position to form a responsible judgment, much less to develop a serious program.

### *Peace in the Abstract*

"The result of gearing all policy to the presumed wishes of the uncommitted is that many issues are falsified and many problems are evaded. Abstract declarations substitute for concrete negotiations, and diplomacy is reduced to the coining of slogans. Pressure for confrontations of heads of major states is exerted, but is not accompanied by any detailed programs. Peace is demanded in the abstract, but much less attention is given to defining the conditions that make peace meaningful.

"Far from aiding the diplomatic progress that is demanded so insistently, such a process tends to thwart it. Far from 'strengthening the United Nations,' it may ultimately undermine it. Soviet negotiators will lose any incentive for making responsible proposals, since they will be constantly tempted by opportunities for cheap propaganda victories. The West will grow increasingly frustrated when it finds itself incapable of enlisting the support of the new nations no matter how moderate or reasonable its program. And the new nations will be induced to take positions on issues in which the very act of noncommitment proclaims their unconcern and with respect to which their judgment is often highly erratic. It is far from clear why nations that are in need of assistance in almost all aspects of their national life, many of which have difficulty maintaining order within their own borders, should be capable of dealing with the whole gamut of international problems.

**Neutrality as an end in itself**

"Indeed, when neutrality becomes an end in itself, it can unwittingly lead the uncommitted to add their pressure to that of the Communist bloc. The tendency to seek a position separate from the two big blocs can be used by skillful Communist diplomacy to drive the West back step by step.

"When countries as varied as India, Yugoslavia, Indonesia, Ghana, and the United Arab Republic form a 'bloc,' they are united above all by two motives: to stay aloof from the disputes of the major powers and to magnify their own influence. This desire is understandable. But we must not assume that they will be swayed from this course by the logic of our argument. Apart from domestic and Communist pressures, the internal politics of the neutral 'bloc' will prevent it. Individual neutralist nations will not easily separate themselves from their partners even if they should disagree with them on specific measures. . . . The United Arab Republic will be reluctant to disavow extremist African states lest it forfeit its claim to leadership in Africa. The tone of the whole neutral 'bloc' can thus easily be set by the most irresponsible of its members. While we should have

patience with these attitudes, we must understand also that on any given issue most of the new nations will seek a position between the two contenders regardless of the merits of the disputes.

**The consequences of Soviet behavior**

"As a result, a premium will be placed on Soviet intransigence. When Mr. Khrushchev spoke to the General Assembly in September 1960 . . . his intemperance was contrasted with the sobriety and statesmanship of President Eisenhower. There is no doubt that Mr. Khrushchev was intemperate. It is less clear, however, whether in the long run his actions will not prove of considerable advantage to the Soviet Union. The very violence of the attack on Mr. Hammarskjold served as a warning to the new nations of the fate awaiting them should they displease the Communist countries too much. In any given crisis, therefore, the urgings of the new nations may be directed against us not because they disagree with our position but because opposition to us carries few risks. Conversely, the virulence of Communist reaction to any criticism causes the uncommitted to behave with great circumspection. . . .

"The speeches in the General Assembly of 1960 by such leaders as Nasser, Sukarno, Nkrumah, and even Nehru illustrate this point. The attacks on the West were pointed and direct, those on the Communist bloc circumspect and highly ambiguous. Almost every speech by these leaders attacked Western imperialism. Not a single reference was made to the unprovoked Soviet threat against Berlin—not to speak of other Soviet policies in Eastern Europe. Nor did the uncommitted nations that were supposed to have been alienated by Mr. Khrushchev rush to the defense of the Secretary-General.

"Further, if one considers Soviet relations with the neutrals from the point of view of bargaining technique, Communist belligerence may not have been nearly so foolish as was often alleged. Since the new nations are not likely to support the position of either side completely, regardless of what arguments are presented, it may in fact be good negotiating tactics to start from extreme proposals. Then even if the new nations support Communist demands only partially, the Soviets can in effect add the pressure of the uncommitted nations to that of their own bloc in order to realize at least part of their program.

"The requirements of maintaining formal neutrality force many leaders who have opposed the Soviet Union on one issue to support it on another. Thus at the 1960 session of the General Assembly, Mr. Nehru failed to support Mr. Khrushchev's proposal for a change in the UN Charter with respect to the Secretary-General. In return, he proposed organizational changes whose practical consequence came very close to meeting Mr. Khrushchev's aims. Soviet brutality, coupled with the desire of the uncommitted to remain neutral above all else, can establish the familiar Soviet diplomatic 'rules' in the UN, [in] which the only acceptable changes in the *status quo* are those which magnify Communist power or influence.

"Conversely, by seeking to meet all the presumed wishes of the new nations, we may force them to move away from us to demonstrate their independence. It would be ironic indeed if in seeking to approach them too closely we drove them in the direction of the Communist position.

### *Determine Policies and Pursue Them*

"World opinion is not something abstract that our diplomats must seek to discover and to which we then must adjust. We have a duty not only to discover but to shape it. World opinion does not exist in a vacuum. It is compounded of many factors, including the imagination and decisive-

ness of our own policy. Many a leader from the uncommitted areas would prefer a clear and firm United States position to the almost desperate attempt to make him share responsibility for our actions.

"When we are convinced of the correctness of our course, we should pursue it, even if it does not gain the immediate approval of the uncommitted—particularly in fields such as disarmament and European policy, which are remote from both the understanding and the concern of the new nations. If the uncommitted are to act as intermediaries, there must be clear positions to mediate. Otherwise a responsibility is thrown on the neutrals or on the United Nations that they will not be able to bear. . . .

**No popularity contests**

"In dealing with the new countries, we obviously have to do much more than engage in a mere popularity contest for their favor. We must show sympathy and support for their efforts to realize their economic aspirations —to an extent considerably beyond our current contribution. We must respect their desire to stand aloof from many of the disputes that divide the world. On many issues we can work closely with the new nations, and on all issues they are entitled to our understanding and sympathy. But we must not expect that either our sympathy or our economic assistance will be paid for with short-term political support. . . . *Some* situations are conceivable where we may have a duty to act without the support of the new nations, and perhaps even against the opposition of some of them.

"Though we naturally prefer to be popular, we cannot gear all our policies to an attempt to curry favor with the new nations. We cannot undermine our own security for illusory propaganda victories, because the safety of even the uncommitted depends on our unimpaired strength—whether they realize it or not. As for the uncommitted, we must make it clear to them that they cannot eat their cake and have it too: they cannot ask us to respect their neutrality unless they respect our commitment. And they cannot remain uncommitted and expect to act as arbiters of all disputes at the same time.

"We thus face two contradictory dangers: we can demoralize the new nations by drawing them into the political relationships of the Cold War, but we can also demoralize them by making a cult of their noncommitment and acting as if only incorrect United States policies kept them from taking sides. The latter danger may be the more insidious because it is the more subtle. We have to face the fact that in major areas of the world, constructive programs as well as defense depend largely on us. Compassion, understanding, and help for the new nations must not be confused with adjusting all policies to their pace. The cult of noncommitment could doom freedom everywhere. . . .

**Needed: a change in attitude**

"What is involved here is a question of style as well as of substance. Moderation, generosity, and self-restraint are all desirable qualities in our relations with the new nations. But one receives credit for these qualities only if an alternative is known to be available. If we seem forever on the defensive, frantically striving to stave off disaster, and if we give the impression that we use world opinion as a substitute for developing our own purposes, our policy will seem to be the result of panic rather than of sober thought. Regardless of what they may think of the individual measures we advocate, our constant defensiveness and our erratic behavior may merely convince the new nations that we are doomed.

"Even more important than a change in policy, then, is a change in attitude. We will finally be judged not so much by the cleverness of our arguments as by the sustained purposefulness of our actions." ("The New Cult of Neutralism," *The Reporter,* Nov. 24, 1960)

# THE STATE OF CASTRO'S CUBA

## AS SEEN BY A SYMPATHIZER

*Dr. Mills, author of* The Power Elite, *is professor of sociology at Columbia University.*

**C. Wright Mills**

The specific combination of features in the Cuban revolution "is historically unique. . . . Like Mexico's revolution of forty years ago, Cuba's is based upon the peasantry, but the land reform in Cuba is far more thorough, rapid, and successful than Mexico's or Bolivia's. . . .

"In at least six Latin-American nations, the vicious role of the traditional military apparatus in political, social and economic life has been destroyed. In Cuba, this apparatus has been totally and almost suddenly smashed—and with it the dominant economic powers.

"The Cuban revolution has swiftly destroyed the economic basis of capitalism—both foreign and Cuban. Most of this power was foreign—in fact, North American. It has now been destroyed with a thoroughness unique in Latin-American history.

"Moreover, Cuba's economic success—due primarily to her successful and intelligent agrarian reform, and helped at a decisive juncture by her economic agreements and trading with Soviet-bloc countries—makes Cuba impregnable to effective economic blockade or pressure from U. S. interests.

"There are, of course, other features of this revolution, but it is this combination that is unique in Latin America. And it is this combination, with various modifications and additions, that in my judgment is now a major alternative to continued misery elsewhere in Latin America. One thing that might stop it from becoming the most probable alternative is a drastic change in U. S. policy. But given the character of the political economy of the U. S. today, I do not think it reasonable to expect a change of the sort that would be needed: The United States Government would have to actively help Latin Americans destroy the vested interests inside their own countries as well as the vested interests of U. S. corporations now operating in these countries. For it is this alliance of U. S. capital with local interests that now rules much of Latin America today—and so helps to keep it in the condition that it is in.

"Without the destruction of these interests—both Latin and North American—no real economic changes can reasonably be expected, certainly not at a sufficiently rapid rate. And without such structural economic changes, 'democracy' will remain what it now is in most of this continent: A farce, a fraud, a ceremony.

"*And that is why I am for the Cuban revolution. I do not worry about it, I worry for it and with it.* Like most Cubans, I too believe that this revolution is a moment of truth, and like some Cuban revolutionaries, I too believe that such truth, like all revolutionary truth, is perilous. Any moment of such military and economic truth *might* become an epoch of political and cultural lies. It *might* harden into any one of several kinds of dictatorial tyranny. But I do not believe that this is at all inevitable in Cuba.

And I do believe that should it happen it would be due, in very large part, to the role the Government of the United States has been and is continuing to play in Cuban affairs. . . .

"The policies the United States has pursued and is pursuing against Cuba are based upon a profound ignorance, and are shot through with hysteria. I believe that if they are continued they will result in more disgrace and more disaster for the image of my country before Cuba, before Latin America, and before the world.

"Moreover, I think that U. S. policies and lack of policies are very real factors in *forcing* the Government of Cuba to align itself politically with the Soviet bloc, as against assuming a genuinely neutralist and hence peaceful world orientation. In fact, these policies are making it very difficult indeed for Cubans even to discuss such an orientation. More than any other single factor, these U. S. policies are forcing the Cuban Government to become 'harder,' to become more restrictive of freedom of expression inside Cuba. In brief, they are forcing Cubans to identify all 'minority views' with 'counterrevolution.' And they are forcing the Cuban Government to identify 'anticommunism' with 'counterrevolution.'

"Let me say, as flatly as I am able to say, that were I a Cuban, acting in the Cuban revolution today, I too should feel it necessary to make this latter identification. For the plain truth is that the kind of ignorant and hysterical 'anticommunism' that is now the mood, the tone, and the view of many of the highest governmental officials of the United States of America *is* of the McCarthy type. And I am just as opposed to this as I am to Stalinist practice and proclamation. Surely our aim, in the U.S.A. and in the U.S.S.R., should be to go beyond both.

"The Cuban Government, as of mid-1960, is *not* 'Communist' in any of the senses legitimately given to this word. The Communist party of Cuba, as a party, does *not* pose any serious threat to Cuba's political future. The leading men of Cuba's Government are not 'Communist,' or even Communist-type, as I have experienced communism in Latin America and in research work in the Soviet Union. . . .

**A new type of revolutionary**

"The Cuban revolutionary *is* a new and distinct type of left-wing thinker and actor. He is neither capitalist nor Communist. He is socialist in a manner, I believe, both practical and humane. And if Cuba is let alone, I believe that Cubans have a good chance to keep the socialist society they are building practical and humane. If Cubans are properly helped—economically, technically and culturally—I believe they would have a *very* good chance. . . .

"My worries for Cuba—like those of knowledgeable Cuban revolutionaries—have to do, first, with problems of politics. The Government of Cuba is a revolutionary dictatorship of the peasants and workers of Cuba. It is legally arbitrary. It is legitimized by the enthusiastic support of an overwhelming majority of the people of Cuba. . . .

"I do not like such dependence upon one man as exists in Cuba today, nor the virtually absolute power that this one man possesses. Yet I believe it is not enough either to approve or to disapprove this fact about Cuba. . . . One must understand the conditions that have made it so, and that are continuing to make it so."

No one can make up his mind about something like the Cuban revolution, or about U. S.-Cuban relations, without answering two questions:

"1. Is it possible today to have a society that is economically just and sensible and at the same time politically fluent and free? This is an old question, an ultimate question, a continuing question—and no one knows

the answer to it. Despite the burden of the Cuban past, and the consequences of U. S. policies—past and present—I believe that Cuba does now represent a real chance for the development of one form of such a society. (There are, of course, many possible forms.)

"2. Is it politically possible, economically viable, and militarily realistic for a country such as Cuba to achieve a thoroughly neutralist and genuinely independent orientation in world affairs? Despite the systematic myopia of U. S. policies towards Cuba, and the astuteness of Soviet policy, I believe there is still a chance. To increase that chance, I believe, is the only realistic goal the United States can now take up in her Cuban policy. . . . We must answer—with fact, with reason, and with civilized policies—the argument of these revolutionaries of the hungry-nation bloc." (*Listen, Yankee: The Revolution in Cuba*)

## AS SEEN BY THE COMMUNISTS

*On a basis of conversations with Communist leaders, and particularly with Rafael Rodriguez, editor of the Communist party newspaper* Hoy, *a former Moscow correspondent now assigned to Cuba paraphrases the Communist estimate of their position in Castro's regime.*

**Max Frankel**

"In the early days after Fidel Castro seized power here the Communist party had 'many disagreements' with him about tactics and ideology. Gradually, however, it was able to convince the Premier that 'anticommunism' was a threat to his revolution and power. Thereafter the ideological differences withered away until now there are 'only little things between us.' Premier Castro does not like 'a few of our ideas and we do not like a few of his—nothing important.'

"The reported impression of diplomatic observers here that the Communists are close enough to Premier Castro 'to shape his thoughts, to flatter his person and concept of independence and to manage much of the day-to-day affairs of his government' is 'perfectly correct.' Observers are also accurate in their doubts that the party can always 'control or restrain' the bearded young leader of the revolution.

"Premier Castro 'seems to have come to understand' and to appreciate the value of a completely loyal, dedicated, disciplined and competent organization, such as the Communist party, that is prepared to aid his cause as long as he protects it as a vital element of his revolution. Thus the party needs Dr. Castro and he needs the party, and their relationship is cemented by this fact. Ideology requires organization to survive and there is no Castro organization in this sense. . . .

"Most recently the Cuban Communists have had considerable trouble among themselves, however. The trouble was with 'sectarians' in the movement. . . . 'There are many in Cuba now who want to make a bigger revolution than the Bolsheviks.' They clamor for more positions in the unions, in the Government, in other organizations, and for more control over the peasants. To preserve the Communist position within the revolution, however, these extremists have had to be restrained and the more moderate faction of the party has been successful in this.

"If geography were different, if Cuba were not directly in the United States sphere of influence or at least closer to the frontiers of the Communist nations, these tactics might be different. As it is, the party's main job now is the promotion of its ideology in the Government and among the Cuban people. . . .

"The one unique development of Communist tactics in the Cuban situation is the party's present 'thorough cooperation' with Castro organizations and other revolutionary groups. In many situations it is not a question of the Communists' 'dictating' to other groups as in the early days of the Chinese and East German seizures of power, but a situation of genuine association in a common effort. The Cuban Communist party is being kept deliberately small in numbers. . . . The 'Leninist' core of the party today probably numbers between 20,000 and 30,000.

"From the Communist point of view the Castro forces made some 'serious mistakes' early in the revolution, by alienating potentially useful middle class elements, including small landowners, businessmen and technicians whose relationship to the former ruling class had been only 'marginal.' Zealous young officials of the Castro movement interpreted revolution to mean the need to seize everything in sight, every tractor and every house and all the land that was available, and the weak Castro organization was unable to discipline its members sufficiently. But Premier Castro has realized the harm and has recently set a more proper course designated not to frighten useful supporters into opposition. . . .

"The Government and the Communists are agreed that non-Communists as well as Communists will hold official positions, teach at the universities and have other forums of expression and influence. But the universities, like the unions and other organizations, will have to be dedicated 'to the complete service of the revolution' and no one will be allowed to teach, advocate or organize antirevolutionary or anti-Communist doctrines or groups. . . .

"It is to be hoped that the United States realizes that Cuba is a 'lost cause.' If the Cuban revolution survives, say, another two years, it will stand as an example before all Latin America that the 'imperialists' can be defied. Invasion on the other hand might be an even bigger defeat for the United States in Latin America.

"From the United States point of view, probably the only intelligent approach is one similar to that advocated by Chester Bowles, the foreign policy adviser to President-elect John F. Kennedy. This would be to deal with Cuba on the basis of 'mutual respect' while marshaling ideas and financial aid to postpone—'you will never prevent'—revolution in the other nations of the Western Hemisphere." (*The New York Times*, Nov. 27, 1960)

## AS SEEN BY THE FIDELISTAS

**Frankel**

"Relatively few Cubans today live better than they lived before Fidel Castro seized power twenty-three months ago. But the majority lives with a hope nurtured by impassioned oratory, a tendency to blame 'enemies' for what has gone wrong and a satisfaction with the limited but dramatic symbols of what might be done for them.

"Some of the symbols are physical: Startlingly incongruous and handsome modern new school buildings at the edges of towns of shacks; bright new little one-family suburbias and antiseptic new clinics and refurbished hospitals in some towns and cities; two sets of children's swings and a flag-bedecked radio in the grassy commons of a palm-enshrouded village of waterless shacks.

"Some of the symbols are social: The destruction of gambling dives and blatant houses of prostitution, the opportunities for legitimizing marriages and grown children, the enthusiasm and concern of Government welfare workers who offer a few pesos or a clean bed for the night when needed,

and the knowledge that few can bribe their way into luxurious privilege anymore.

"Some of the symbols are spiritual: The expansive chests and high heads of tens of thousands of militiamen, who receive no pay and even buy their own uniforms and are bivouacked in former cattle stalls, marched to exhaustion, drilled in the machinery of complex foreign mortars and machine guns and celebrated as the pride of the future, the saviors of Latin America, the personal charges of the 'maximum leader' Fidel Castro. Other such spiritual symbols are the dignity of a right to loll on once-exclusive beaches, the pride of black commanding white and of once-poor commanding once-rich, the fame of renown in the world and the heady security of a cause.

"Finally, Cuba is buoyed by the comfort of numbers, still large numbers, who are 'with Fidel.'" (*The New York Times*, Dec. 2, 1960)

## AS SEEN BY THE OPPOSITION

*An instructor in economics at Barnard College, who recently spent two months studying developments in Cuba, reports on the internal opposition to Castro.*

**James O'Connor**

"In the hostility of the urban bourgeoisie—those ex-rentiers, businessmen, professionals, and tradesmen who are now—privately—fiercely anti-government—lies the only current internal threat to Premier Fidel Castro's rule." As long as they have no support from other classes, Castro "can convert their intransigence into a domestic enemy to consolidate further his hold on the rural masses." But if they adapt themselves to the revolution, "he can revive private commerce and enlarge the scope of the free-market sector to ease the burden of planned economic development."

The first alternative might require repressive measures to enforce future expropriations of Cuban-owned enterprises; previous steps against these have led to increased counterrevolutionary activity. In the second case, he would have to curb his own Left "whose influence at home—thanks to the United States' disastrous Cuban policy—is far out of proportion to its actual numbers."

The middle class has few allies now, but "if the island's economy should take a serious turn for the worse, . . . Castro's enemies could claim the support of the urban working-class, or a large portion of it, . . . of the many town-dwelling agricultural wage workers whose condition has been virtually unaffected by agrarian reform [and] of many farm owner-operators (of whom there are roughly fifty thousand in Cuba) whose economic independence has been threatened by Agrarian Reform Institute's (INRA) controls."

A stronger opposition would probably get more support from the United States. "Hence, in the event of economic collapse, the revolutionary government would have to contend with an authentic resistance movement at home, together with an external threat of growing proportions. Concessions or restraints would be unavoidable." But either would weaken the regime.

Many internal opponents at least outwardly obey the regime. "They have submitted to the intervention and expropriation of private business, and have yielded their lands in the interior to militant INRA cadres. Up to now, their opposition inside Cuba has been limited to black market operations, heated denunciations of the regime in the privacy of their

own homes, and a long-faced, passive hostility in public. . . . In middle-class cinemas the Pope, President Eisenhower, or even MGM's lion win far more applause than Premier Castro, who is more likely to be booed. At mass meetings, one no longer sees middle-class representation; this was not the case as late as last spring. Perhaps the best rough measure of middle-class disaffection is the necessary waiting time for a United States visa as a result of mounting demand: in September, about one year, compared with a few days a year ago."

Some middle-class opponents of the regime deny it any achievements. But others are ambivalent. "They realize that some type of land reform was long overdue. They are impressed with the Government's honesty in the handling of public funds. . . . They are surprised that the regime can function with a minimum of physical coercion and an absence of police torture. What can be viewed as a sort of class guilt has conditioned their response to the entire range of revolutionary political and economic measures." They are the "moderates" among Castro's opponents. But Cuba's economic pattern, based on the export of unprocessed primary products and the import of almost everything else, has prevented the development of "a strong and viable national bourgeoisie. As a result, the conservatism, the sense of responsibility and permanence, the idea of the 'long-view,' all so characteristic of the U. S. middle classes, do not find a place in Cuban bourgeois ideology. . . .

**The doomed middle class**

"The middle classes—particularly the moderates—still do not appear to . . . understand that what they are witnessing is revolutionary socialism and that as a result they are finished *as a class.*" It is, however, too late for them to come to terms with the revolution. When they realize this, they will no longer acquiesce in Castro's daily decrees. As the chastening effect of middle-class guilt is diluted by the impact of the Government's single-minded drive toward a centrally planned economy, the opposition will grow in number and gain in coherence and intensity. . . .

"The middle classes are small in numbers compared to the total Cuban population. . . . *At the moment* they command no support among other classes." Castro's intellectual opponents are older men; the students are divided but mostly pro-Castro. Anti-Castro elements have been largely eliminated from police, army, and judiciary.

**The passive majority**

Yet three classes, with a majority of the population among them, are only passively pro-Castro. "The fortunes of the urban workers have been closely bound up with private enterprise; . . . many have shared their employers' economic distress." Improvements in the material condition of the town-dwelling agricultural wage workers "have been spotty and insufficient. Better off in absolute terms, their lot has probably been impaired compared with that of the *cooperativistas.*" And INRA threatens the independence of the farm owner-operators.

So far, Castro has retained the support of these three groups. It has been possible to increase per capita incomes by evening out the former extreme inequalities of income and utilizing the large amount of idle productive capacity. But redistribution can only be done once. Perhaps sooner than the planners expect, Cuba will run out of idle capacity. Then any permanent improvement in the urban worker's condition must await planned, broad-scale industrialization, a long-run affair. Improvement for the rural wage-worker depends on a continuing rise in agricultural productivity. Hence a serious failure in the economy could transform the passive support of these important classes into a passive hostility. ("Cuba's *Counter*revolution," *The Progressive,* December 1960)

## WILL THE SOUTH ENFORCE LAW?

*On the basis of a study of three racial episodes for the Southern Regional Council, a Southern writer warns that "the situation is reaching an impasse out of which one of the alternatives is clearly violence."*

**George McMillan**

The key question becomes: What is the region's capacity for preserving law and order? An answer may be found in an examination of three turbulent periods.

In Chattanooga, during prolonged rioting in February 1960, the police "learned by doing." They faced a choice: They could either "let the lawless whites 'help' them put the Negro 'in his place' (their mere presence on the scene is a form of intimidation)," or the police could "assert themselves as the true guardians of law and order." They chose the latter, and the more they moved to control the crisis, the more support they received.

Montgomery "illustrates the type of Southern city that is openly, candidly, and consciously willing to risk chaos—to preserve the racial *status quo*." During a near-riot in March 1960, the police used "the big stick" to intimidate Negroes and to break up their peaceful demonstrations.

In August 1959, during the second attempt to desegregate schools, "Little Rock faced open defiance of its laws and of its municipal government. The Little Rock riot was not an accidental riot, like the one in Chattanooga. In Little Rock, the mob came to test the strength of the city's will and its law enforcement arm. Because of good police morale and professional organization, Little Rock withstood this test. . . .

"The problem of law enforcement in the South in 1960 and beyond is not simply a problem of angry mobs nor of brutish, bigoted policemen. Fundamentally, it is a question of public policy. . . .

"The point must be stressed. . . . The breakdowns in law and order in the South are an outcome of public policy—no less because it is sometimes oral and traditional rather than written in statutes and police manuals."

If the lessons of these three cities are to be learned, each community must reappraise its racial disputes policy. For three points are obvious.

"1. Negroes in the South are prepared to take overt steps to change their status, even at the risk of personal safety.

"2. Negroes may demonstrate in any Southern town. None can now count on immunity.

"3. Existing, traditional Southern police attitudes and training are not likely to be adequate for dealing impartially with the young generation of Negroes, committed to the method of nonviolence. They have forced a reversal of roles on the Southern police officer—now he must protect the nonviolent Negroes from the whites. And, he must do it quickly, because there is no greater danger to law and order in the South today than a Southern public official, police officer or not, caught offguard when trouble comes, and trying to meet the new problems with old, unassessed ideas." (*Racial Violence and Law Enforcement*. Available through Readers Service)

## A NEW CONFEDERATION?

**With the white-dominated Central African Federation of Southern Rhodesia, Northern Rhodesia and Nyasaland in process of dissolution, interest now centers on an African-sponsored plan for a wider confederation of emerging African states. Proposed by Julius Nyerere, chief minister of self-governing Tanganyika, in his capacity as chairman of Pafmeca (the Pan-African Freedom Movement for East and Central Africa), the plan envisages the eventual federation—before they achieve independence and the trappings of sovereignty—of the present territories of Uganda, Kenya, Tanganyika, Zanzibar, Nyasaland, Northern Rhodesia and Southern Rhodesia.**

**The Sunday Times (London)**

"The present political map of Africa south of the Sahara is largely a by-product of nineteenth-century colonialism. Boundaries were drawn where the spheres of interest or penetration of different imperial powers or exploitation companies met. Consequently they often cut right across tribal affiliations and geographical unities. Now these artificial chunks of Africa are being launched as independent states, and such is egotistic nationalism that the frontiers will soon be riveted far more firmly than under imperial rule—a grave handicap to Africa's economic advancement and political soundness, leaving many countries too small, too poor or too isolated ever to stand on their own feet and prosper.

"Any move that can be made at this formative, transitional time towards consolidating the African countries into larger and more coherent units is therefore good on the face of it. In this case, too, the possibility that a federation beginning with British East Africa might help solve the problem of the northern territories of Central Africa is not by any means to be dismissed. There are two essential conditions. The first is that any federation must be freely accepted by those who are or will clearly be the political leaders of its units. The second is that none of the units must be very far ahead of or behind the rest in terms of constitutional development; for neither can the whole be freer than any of its parts, nor can the freedom of any part be long held back by its membership of a less free whole. If we have not learnt those two things from the Central African Federation, we are incapable of learning." (The Sunday *Times* [London], Nov. 20, 1960)

*An African affairs expert, the Commonwealth correspondent of* The Observer *(London), warns against holding the Central African Federation together by force and applauds Nyerere's plan.*

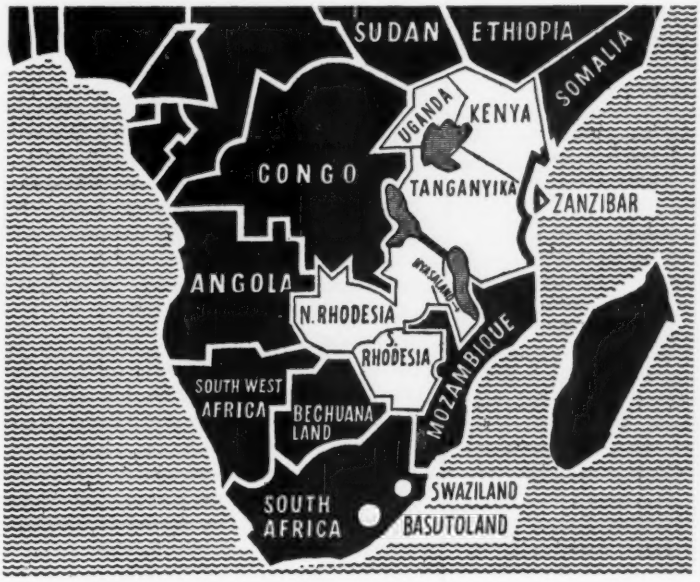
**Colin Legum**

"Many eggs were broken to make the Federation omelet. To unscramble it now is not going to be easy. If it were possible for the three territories peacefully to revert to their previous separate entities, there would be less cause for concern about the future. But the Africans in Southern Rhodesia are unlikely to accept a return to the previous *status quo*, with its white hegemony, while at the same time Nyasaland and Northern

Rhodesia move forward with legislatures in which Africans are in a majority. Nor are the Europeans in the Rhodesias likely to submit tamely to any loss of their political domination through disintegration of the Federation.

"It is important that these dangers should be clearly seen in time if serious racial conflicts are to be avoided. An outbreak of violence would almost certainly compel the British Government to commit its own troops to maintaining security. If this were to happen, we might find ourselves in a situation not unlike that of the Belgians when they committed their paratroops in the Congo last July.

"The situation is not yet irretrievable, provided British policy is capable of making one of its imaginative leaps which have been a feature of our imperial history. Instead of pursuing a policy that would lead to the violent disintegration of the Central African Federation, Britain has an opportunity of gaining for the Commonwealth a much wider and stronger federation, with anything from six to eleven members embracing 30 million Africans, 400,000 Europeans and 300,000 Asians. Such a federation could not be achieved in one step, but unless a decision in support of the principle is taken within the next few weeks, the opportunity may be lost for all time.




"The starting point would be for Britain to back the idea of an East and Central African Federation sponsored by . . . Julius Nyerere, and supported by prominent African and European leaders in Kenya, Zanzibar, Northern Rhodesia and Nyasaland, and by a number of prominent personalities in Uganda. British support for this African initiative would open the way . . . to discuss the possibilities of integrating the four East African territories with the three Central African ones. With an eye to longer-term policy, observers should also be invited from Mauritius and from the three British High Commission territories—Basutoland, Bechuanaland and

Swaziland—none of which can hope to become viable independent states outside a wider community.

"Thus the first step could be planned to establish the framework for a federation of eleven British territories marching in unbroken line from the Sudan to within the heart of South Africa.

"It would be too much to suppose that all these states would immediately become associated with this new federation. It would start with a nucleus of member-states, including probably Tanganyika, Kenya, Zanzibar, Northern Rhodesia and Nyasaland. As the federation showed signs of succeeding, it would offer a strong rallying point for others to follow in time.

"The difficulties in the way of launching such a federation are enormous—but much less so than those Britain was willing to face in trying to make the Central African Federation work. Instead of being inflicted on an unwilling majority by a ukase from Westminster, the new federation idea originates from responsible African sources and carries with it the blessings of influential European leaders.

"Apart from the emotional drive to create a powerful African federation, the sponsors of this idea have strong practical reasons for wishing to see it succeed. The four East African States have been linked loosely through a High Commission which has been of great value to all four; if this link were to be snapped through each territory achieving its independence separately, they would all be the losers. Foreign investment and large-scale aid are much more likely to be attracted by a federation with 30 million inhabitants than by a series of small territories. For Nyasaland and Northern Rhodesia, an association with their northern neighbors offers the safest and quickest route towards their own independence, unimpeded by the pressures from Southern Rhodesia.

"Two big territories which would not be ready to join immediately are Uganda and Southern Rhodesia—the former because it has not yet solved its own serious internal difficulties, and the latter because it would not at this stage be willing to become part of an overwhelmingly black federation. But Uganda's crisis is moving to a climax and the present objections to close association with its neighbors are likely to disappear.

"Southern Rhodesia, too, might eventually find it economically and politically wise to cast in its lot with this federation. If the new federation can show that it is able to provide security and opportunity for Europeans, as Tanganyika has done, the natural fears among Europeans in Rhodesia are likely to diminish.

"The new association, unlike Central Africa's, would not seek to create a single political union. It would probably begin as a loose association of equal member-states, each of which would retain its own parliament and government, surrendering limited powers to a weak political center. The central authority would coordinate economic and trade policies, provide common technical and defense services, and develop an agreed foreign policy. Such a loose confederation would undoubtedly be subject to severe pressures, but it is much more likely to survive than an overambitious attempt to weld an artificial unity.

"In the next decade, all African states are bound to undergo serious internal upheavals before they can consolidate their independence. It is essential that they should be able to settle their internal problems without outside interference. That would be impossible if a centralized federation were to be established too soon, as in the abortive Mali experiment.

"The choice before the British Government is to adopt this imaginative

idea of a new, loose confederation or to continue its sterile policies of trying to rescue the doomed Federation in Central Africa. It cannot pursue both objectives, since they are fundamentally incompatible. Unless the British Government understands the essential difference between the two, it may jeopardize Mr. Nyerere's initiative and might bring disaster on Central Africa." ("Doom and Promise," *The Observer* [London], Nov. 27, 1960)

*A British weekly also comments on the political initiative taken by Nyerere:*

**The Economist**

"If his plans for federation of a major proportion of the east and central African territories did come to fruition he would have created the kind of pan-African unit [Ghana's] Dr. Nkrumah, an earlier African dreamer, has failed to create. If Mr. Nyerere were at its head, there could be a giant new east African state able to approach Nigeria in size, and to rival any other country on the African continent in sense of purpose; and, in the tempest of change, even the unlikely is by no means impossible." ("A Federal Case," *The Economist,* Nov. 26, 1960)

## DEALING WITH COMMUNISTS

*A former UN official and adviser to the Government of Ghana, now principal of the University College of the West Indies in Jamaica, spots a dilemma for African neutralism.*

**W. Arthur Lewis**

"To the average African politician, independence means freedom to do business with both sides. If the Soviet Union can have embassies in London, Paris and Washington, then why should there be any bar against having Soviet embassies in Conakry, Accra or Leopoldville? . . .

"In inviting Russia into their countries even though they fear it, these politicians are walking a tightrope, and they know it. A Soviet embassy is not just a center for cultural relations. The Russians bring in as many of their people as they are allowed to do, flood the country with propaganda, give aid and instructions to local Communists, and try to prepare the country for membership in the Communist bloc.

"African governments hope to evade trouble in two ways. First, by restricting the activities of the embassies. . . .

"The second safeguard on which African governments rely is to ban native Communist parties. This, however, is not a simple operation. It is easy to prohibit a Communist party by law, and this has been done in nearly every African state (making these 'neutralists' more anti-Communist, on the face of the matter, than most of the Western states). But no law can prohibit fellow-traveling, and Communist operations have never depended on having large mass support. . . .

"The real problem for African governments, then, is how to keep fellow travelers out of strategic positions. This is easier for the dictators than it is for democrats—and quite a number of African governments are democratic in the old-fashioned sense. The democratic parties cannot keep out fellow travelers, or prevent them from gaining popularity and becoming ministers in the government. The dictators can control membership of their parties and appointments to influential posts. But the dictators are attracted by the radical approach of fellow travelers. So they tend to surround themselves with fellow-traveling advisers, even though they are afraid of Russia." ("Neutralism In Africa," *The Reporter,* Nov. 10, 1960)

# THE OCEAN AS A RESOURCE

## ITS USE

*A Moscow University specialist in marine life:*

**L. A. Zenkevitch**

"It is my conviction that towards the turn of the century a new science will be born—submarine agronomy—or, if you prefer it, submarine genetics. In the Barents Sea, the Baltic, the Sea of Azov, and the northwest of the Black Sea, numerous small bays and inlets will become reservations for Marine State 'Farms.' Here, in depths not over 100 meters or so, where the water is penetrated by the sun, agronomists and their staffs will go their rounds in diving dress, riding in swift underwater conveyances, tending the cultivation of all sorts of useful marine plants and creatures; they will, moreover, by careful selection and breeding, create new varieties in marine products—animal and vegetable. Only down in the greater depths, where it is dark and the temperature hovers between 1 and 2° C.—where there are obstacles to the development of life in any form—only down there will submarine 'meadows' and 'market-gardens' be absent." (*Russian Science in the 21st Century*)

*A Soviet geographer and explorer:*

**Dmitri Ivanovitch Scherbakov**

The land mass "forms only 30 per cent of the surface of the globe, while the rest is covered with water. Beneath the sea are great mountain ranges, such as the Lomonosoff Range. Knowing only a third of the surface area of our planet, we are not in a position to establish the general laws of its structure. The mapping and charting of the ocean bottom will be one of the gigantic tasks confronting scientists of the twenty-first century. This will not be of purely theoretical interest. Today we have succeeded in penetrating the bed of the Caspian Sea. There is no doubt that mining below the ocean bed and in the shallower seas will start in the near future. The first drilling operations will probably take place in the Persian Gulf and the Red Sea. Then we shall continue in deeper waters and we shall certainly manage to extract minerals from depths down to 10,000 feet. Man, the lord of nature, will exploit all the riches of our planet wherever they are to be found.

"Even greater prospects await the geologists, for they cannot possibly rest content with their present knowledge, which is limited to an elastic stratum of the earth's crust. As yet we have only bored down to 21,000 feet. If, from a geological point of view, we wish to know the whole surface of the earth in depth, this is like exploring the inside of an apple and stopping at the rind without reaching the core. Sound waves are still the only element that can provide us with information on the depths of the earth. So far we do not know whether the center of our planet has a fiery stellar temperature, a relatively low temperature of 1,000° or 2,000°, or whether on the contrary it is cold. In the twenty-first century it will be possible to bore down to 100,000 feet through the earth's crust, and this will certainly give us a better knowledge of its core. Geologists will be able [to examine directly] the bowels of the earth. . . .

"A resource which today is little used but which in the future will be greatly exploited [is] the heat which comes from the center of the earth. The electric power station of Lardarello in Italy, the thermic establishment in Reykjavik, a few factories in Japan, the U.S.A., and in our own Kamchatka are today all consumers of mineral heat. But this great source of energy is universal. The volcanoes, geysers, and hot springs are only small fissures through which this heat leaks. . . .

"In the near future we shall certainly have to build electric geothermic stations in places where the heat is nearest the earth's surface. . . . But it is merely a question of descending deep enough, for the heat can be found anywhere. One of these geothermic stations could well be built in the neighborhood of Moscow. . . .

"The high-frequency geothermic station draws its power from the depths of the earth. At a depth of between 45 and 60,000 feet the drills descend until they come to the magma compressed by the vast pressure of the upper strata. During the crystallization of the magma great quantities of incandescent gas and steam are released, which have an outlet through a tube as though it were being ejected by a volcano. But this modern volcano is subject to the will of man. The mass of steam and gas they eject is conveyed by tubes into separators," where the valuable elements—helium, hydrogen, magnesium, aluminum, calcium, sulphur, and others—are condensed and purified, harmful agents and steam being eliminated. (*Russian Science in the 21st Century*)

*A columnist for United Feature Syndicate:*

**Ed Koterba**

"Industrialist Harold G. Quase, Washington, fascinated me . . . when he unfolded his plans to safeguard vital supplies from atomic attack and radiation by means of the only fool-proof method left to man—through underwater storage.

"Later he showed me the product of his dream—two underwater rubber tanks, each 10,000 gallons in size, buried in the bay off St. Petersburg, Fla. After he tested those prototypes, he presented them to the city for storing emergency water.

"And now he has just signed a contract with one of England's largest construction companies, the Motherwell Bridge and Iron and Engineering Co., to build underwater shelters and tanks in the seas of forty friendly foreign nations. The first project—[installation of fifty tanks in the Persian Gulf]—will be started in January. That project alone runs nearly $1 million. The tanks will store drinking water for the desert area, largely for oil interests which had been plagued with the problem of water evaporating in above-ground containers. . . .

"I have long given up questioning Mr. Quase's ideas, especially after I read the other day where the Navy is considering spending several billion dollars for underwater wharfs and loading platforms for our Polaris submarines." (New York *World-Telegram*, Dec. 19, 1960)

## ITS ABUSE

*The science correspondent of* The New Statesman:

**Nigel Calder**

"I call the oceans the new Wild West because of their almost unlimited commercial potential and their potential lawlessness. Until recently, man's only interest in the undersea (apart from submarine warfare) has been the hunting of fish; now the promise is that the biological riches of the

sea, founded on the photosynthesizing plankton-pastures at the surface, will provide for more protein for human food than they do at present. . . .

"With so much wealth, there is a wide scope for national and commercial rivalry. The day cannot be far off when the first ranch will be created, the first mining claim staked. Who will enforce as yet nonexistent laws in these huge territories which nobody owns? Nor is it just a matter of avoiding gunfights: in their enthusiasm, the first fish-farmers could easily wreck the balance of nature in the sea.

"Already there has been trouble. To the nuclear engineers, the ocean depths seemed a natural place to disembarrass themselves of shiploads of radioactive wastes; only the fury of usually gentle oceanographers has outlawed that practice—for the time being. Now, too, the oceans are becoming part of the nuclear weapons systems of the U. S. and Russia: the first missile-carrying submarines are slipping out to sea and fixed undersea missile bases and communications centers are a real possibility; the drums are beating for a new, weird war dance among the fishes.

"The story has all the traditional elements of a sea saga: the battle with wind, wave and ice; the daring of exploration in bathyscaphes at pressures where structural failures mean instant death. It also has hard science and several embryonic technologies. It has the promise of good fortune for all men; but it also has the threat of new stupidities and new cruelties.

As man stretches his good spirit and his greed, his scientific humility and his military pretensions, into a new dimension, there are three-quarters of the Earth, almost virgin, to win, lose or die for." ("The New Wild West," *The New Statesman,* Nov. 5, 1960)

*The director of the Division of Health, Safety and Waste Disposal of the International Atomic Energy Agency:*

**George W. C. Tait**

The vast quantities of radioactive wastes that will appear if present plans for production of atomic energy succeed would contaminate a major source of man's food if they were dumped into the sea. "The value of the ocean abysses as isolated disposal areas is now doubted," as a result of new research. Permanent storage on land, which now accounts for 99.9 per cent of waste disposal, thus seems to be the solution for the future as well—unless new ways of producing nuclear energy are found which do not yield such a tremendous amount of wastes.

The much publicized disposal of radioactive wastes off the coasts of several countries has been so small when compared with the quantities produced that it "can hardly be considered any real contribution to the world's problems of waste disposal. . . .

"Those responsible for controlling these relatively small releases of radioactive wastes into the sea generally go to great lengths to ensure that conditions leading to pollution harmful to man cannot occur. It must of course be recognized that pressure can be exerted to interfere with the successful carrying out of their work. . . . Those who are most concerned with the economics of nuclear energy may be tempted to advocate any techniques which appear to provide the possibility of cutting costs. This is particularly true at the present where the calculation of nuclear power costs are very critical and any small saving in handling wastes might affect the competitive position of a particular proposal. For this reason there is much to be said for an organization which widely separates the control of radioactive waste disposal from those concerned with production." ("Atoms Overboard!" *The Unesco Courier,* July-August 1960)

## CONSERVATION AND RE-USE

*Dr. Higbee, a professor of geography and agricultural economics at the University of Delaware (See* Current, *December 1960, page 26), proposes more imaginative use of water and land, with some beneficial by-products.*

**Edward Higbee**

"Despite growing demands for water, the United States seems quite amply endowed for a long time to come. Where there are shortages, the central problem is generally not one of original supply so much as it is inadequate distribution, expensive storage, or pollution. It is the cost of clean water which rises with population increase that makes it a major problem in many growing communities."

For every city, such as Boston or New York, that has been fastidious and farsighted enough to create adequate reservoir areas in clean rural districts, far away from the centers of population and pollution, there are many more "which scoop their supplies from contaminated streams and lakes into which others have discharged their wastes. Not a city on the Eastern seaboard is really forced to this unattractive expediency, for the Appalachian mountains and their Piedmont foothills are everywhere within reach by a modern aqueduct. Nevertheless, adequate measures are seldom taken to acquire sites for reservoirs or protected watersheds while these farm and forest hinterlands are still relatively cheap and unpopulated. . . .

"As large cities and their suburbs continue to merge into vast conurbations, the problem of floods will also become more aggravated. On the one hand there will be a rising demand for water and on the other catastrophic visitations of too much. Whereas rains of the pre-industrial past soaked into country ground, they now drain quickly from the eaves of urban buildings and from the streets to create torrents in depressions where other houses and industries have sprouted in defiance of the law of gravity which guarantees there will be floods in low places at times of unusual runoff. The proper counterbalance to the increased runoff from cities would be a system of retention reservoirs in the rural sections of any particular watershed. As the urban drainage surface expands, the remaining rural watershed should be harnessed to compensate.

**Parks to reduce floods**

"Two objectives could be achieved by the same engineering. The water stored by retention dams in rural areas to reduce flood discharge of tributary waterways could be saved to supply the cities with virgin drinking water. With proper care the forested and meadowed buffer lands around the reservoirs could be used as parks while the waters themselves could be used for recreational boating. . . .

"As time and progress bring better things, new challenges continue to poke scientists in the ribs. . . . Old-fashioned soap suds would disappear in the fermenters and aerators of municipal treatment works, but not so the miracle froths of today's wonder cleansers. . . .

"Sylvan C. Martin, regional director of the United States Public Health Service, has indicated that there is a growing hazard in the 'tremendous

rise' of little-understood pollutants that defy ordinary sewage-disposal treatments." It seems altogether remarkable that there is so much agitation against fluorine, which can promote dental health, and so little against "genuine contamination of the public drinking fountain.

**Use, irrigate, re-use**

"But the picture is not all gloom. Two Wisconsin agricultural specialists have announced that sewage effluent has its merits as well as drawbacks. Professors C. J. Chapman and J. W. Clark found that by irrigating pastures with stream water carrying sewage effluent from the City of Madison's disposal works they increased the dry matter forage yield of a pasture by 400 pounds an acre. . . . Where the value of sewage effluent is proved it would be a simple matter to pipe it or run it through a ditch for disbursement on crop lands." Health hazards must be coped with before sewage can be applied to crops for human consumption; but other parts of the world, especially the Orient, have long known the value of salvaging the enormous quantities of nitrogen, phosphorus, potassium and other useful minerals that America squanders.

"A wider use of sewage effluents on forage and industrial crops, feed grains, and tree farms will doubtless come in the future. If communities were able to plan their total land use wisely, they would zone some areas near their sewage-disposal works for perpetual farming or forestry and they would locate these works near rivers. Thus very little water would be lost and almost all useful minerals would be salvaged. The crops would get the minerals as the effluent would pass through the soil. The streams would eventually get the water through underground seepage. Such natural cleansing systems would be far cheaper for the taxpayer and more healthful to the future user of reclaimed water. But without total land-use planning for city and hinterland such practical ideas stand little chance of coming into general use.

"In nearly every densely populated area the underground water table is dropping because of excessive withdrawal, yet little effort is made to recharge the subterranean reservoirs with sewage effluents, as probably would be done if scientists rather than politicians were to make the decisions about what is done with America's water supply." Some years ago the world's largest producer of frozen foods, Seabrook Farms of southern New Jersey, pumped a million gallons a day from the ground (it takes forty gallons to wash a pound of strawberries) and had trouble getting rid of it. They found they could spray used water on a nearby forest, which soaked it up faster than any field and put it back in the ground ready for re-use. Any city which uses ground water should study its local geology and consider the maintenance of municipal forests for effluent disposal. "From the standpoint of national planning, water that goes into the ground anywhere is likely to be of eventual use to some community." Thus no salvageable water should be discharged into a stream unless the water is immediately essential to support navigation.

**Undrinkable but usable**

Another approach to a more sensible use of water supplies would be based on recognition that less than one gallon is actually imbibed out of every 1400 gallons pumped through a city's water mains. It is manifestly unnecessary and uneconomical, "and it is becoming less and less possible, for many cities to maintain desirable drinking water standards for everything that goes through the public mains. . . . It is a practice already common in Europe and almost universal in Latin America for people to buy what water they drink from commercial bottlers who have sources that are free of man-made contaminants and to depend upon public service for the rest." *(The Squeeze)*

## STRANGULATION OF THE SHORELANDS

*Professor Higbee (see page 39) finds the nation failing to provide for its future enjoyment of ocean beaches.*

**Edward Higbee**

"No raw land, unchanged by human investment, has increased in value so fantastically as the seashore. It is the outstanding example of what population pressure can do to the market price of space. It is also an index of the desperate desire that a too-civilized humanity feels for a place 'away from it all'—a desire that intensifies as cities and suburbs become more crowded and contacts with the natural world become fewer and less accessible to the greater portion of the population.

"In the past fifty years, while ocean frontage has increased in value 10,000 per cent, the American population has doubled from 90 million to 180 million. Fifty years hence, if there is such a thing left as undeveloped seashore, perhaps $500 a front foot might look like a steal. The ocean beach is one commodity which will not stretch. Rivers can be dammed to create vast and beautiful lakes such as Lake Mead behind Hoover Dam. Swimming pools can be installed wherever there is water to fill them. But the creation of an ocean and the land's rim around it is still beyond the genius of man. The sea coast that exists now is all that is likely to exist for the balance of human time.

"As measured by the Coast and Geodetic Survey, the east coast of the United States from Calais, Maine, to Brownsville, Texas, is nearly 3700 miles long. A mere 240 miles of this total (about 6½ per cent) belongs to the public and not all of that is available for general use. Were it not for military acquisitions in strategic places, there would be even less ocean shore within the public domain. More than half of the 240 miles of public sea front is confined to three reservations: Acadia National Park in Maine, Cape Hatteras National Seashore Recreational Area in North Carolina, and Everglades National Park in Florida. The balance is scattered among thirty-six smaller areas in fourteen states. Four states with ocean frontage have no Federal or state parks on the sea. A few municipal and county beaches are all that they have salvaged of their original heritage.

"On the Pacific, not including Alaska and Hawaii, there are 1743 miles of general shore line of which 295 miles are in state and Federal reserves.

"Congestion along the ocean's edge is unlike congestion anywhere else because time is fast running out when something really effective can be done about it. Insofar as this particular water front is concerned, the public appears doomed to fight a rearguard action from here on out. It may salvage a few more scraps as consolation prizes, but the really big opportunities to satisfy its needs lie dead on the forensic battlefields of the past. Once there was brave talk of saving the seashore for all time for all generations, but the major burden of these speeches fell upon the clerks who recorded and filed them. Neither legislators nor citizens were moved to action; and it is doubtful, if the same opportunities existed today, that voters or their representatives would do differently.

"There is a conviction on the local political level that it is wrong for the Federal and state governments to remove seaside from the local tax roll even if it is to be set aside for public use. 'What has posterity done for us that we should clip our tax base for posterity?' is the cynic's sharp query. Such a thrifty philosophy has broad popular support and in seaside communities it has gone far to frustrate the acquisition and development of Federal and state water fronts. After all, the Federal Government could pay a hundred dollars a foot for all the still desirable but undeveloped seashore on the Atlantic and Gulf coasts and the bill would not come to one half of one per cent of a single year's budget. By recent count there were still over 600 miles of ocean beaches that would make excellent national recreation reserves, and most of those vast stretches could be bought for less than a hundred dollars a foot.

**600 miles still available**

"It is not a lack of purchase money nor the lack of opportunity to buy which has deprived a growing nation of ample ocean frontage. It is a conflict in tax policies between local and Federal governments and a woeful lack of understanding on the part of public officials at all levels of government as to their responsibilities for the well-being of the total citizenry. The average person is utterly without an articulate concept of the American landscape as to its dimensions and variety, or what is now happening to it under the onslaught of population increase and real-estate speculation. It is hard enough to grasp what is going on in a single city or suburb without trying to visualize how the nation is put together in space. Yet any kind of rational approach to the wise use of water front demands such concepts. . . .

**Exploiting summer residents**

"Ocean shore towns have a good thing in low tax assessments for local residents on inland house lots and high assessments for summertime cottagers [who call for relatively little public service and do not send their children to local public schools] on the water front. . . . Counties and towns in such a lush position to be subsidized by summer vacationists are not eager for the Federal Government to buy their beach front and remove it from the tax roll. Generally they will bring all possible political pressure to prevent it.

"In 1935 . . . the National Park Service made a survey of the Atlantic and Gulf coasts, looking for unspoiled seashore that might serve as public recreation areas . . . [and] recommended that twelve major strips, containing 437 miles of the ocean's edge, be acquired as national reserves. In the quarter century that has since elapsed only one of these sites, the Cape Hatteras National Seashore, has been bought. Meanwhile all the others have gone into private and commercial development—destroying for all time their wild, unaltered beauty. . . . If local citizens thought they could keep beach land on the tax roll and yet enjoy the privilege of free entry, they were mistaken."

It took an eighteen-year effort by the National Park Service and a handful of Congressional supporters to establish the Cape Hatteras National Seashore over the protests of local taxpayers and businessmen. In five years the influx of summer visitors rose from 100,000 to 348,000; real estate values on private properties nearby soared 50 to 100 times, bringing "property-tax receipts to new levels that more than compensated for what had been removed from the rolls. . . . [Yet when] Senators Richard Neuberger, James Murray, Clinton Anderson, and Paul Douglas proposed in 1959 that the Federal Government purchase other seashore reserves while they were still available, a howl went up among taxpayers, cottagers, and businessmen in the designated areas." *(The Squeeze)*

# THE MASS MEDIA

## VIGILANCE AGAINST UGLIFICATION

*The real estate and building editor of the Louisville* Courier-Journal *suggests that the inadequacy of public criticism is responsible for much that is ugly in the U. S. Mr. Clay is also associate editor of* Landscape Architecture Quarterly *and visiting lecturer in urban design at the University of Kentucky.*

**Grady Clay**

Criticism, as a vital form of public discussion, is essential. "Look about us today. The Tower of Babel, the great pyramids of Egypt, the seven wonders of the ancient world, are nothing compared to the fantastic stuff we are building. If *ever* in our history we should be concerned with *what* we are building, not only how it works but how it looks, it is now. . . .

"I would suggest that to the average American citizen today, three things represent the end result of city planning: The express highway, the modern suburb, and the new redevelopment project.

"Each is a product of mass-production technique. Two of the three would be impossible without condemnation. Each of the three is a highly visible result of somebody's formally adopted plan.

"First, a brief and unfriendly look at each one: The Federal Interstate Highway system . . . is the most efficient method we have ever devised for keeping millions of people in a perpetual state of *animated suspension.* It seems to be devoted to proving an already established fact: That the shortest distance between two points is a straight line. In far too many communities, the public is beginning to decide, 'If this is planning, the hell with it.'

"Next, the 'planned suburb,' a contradiction in terms. It is usually planned for maximum return on the contractor's investment. . . .

"Urban redevelopment is the latest massive example of 'planning.' At last count, some 1,000-plus cities now have a 'workable program'; about fifty have completed a major urban renewal project. Some of the earliest and biggest have given many of us the shudders: Continuous barracks up-ended for one social-economic class; mass evictions, the disappearance of community life and the substitution of mass institutional life. If you travel across the United States, you can glimpse enough of these giant aggregations to wonder: Is *this* our Brave New World?

"If this 'planned environment' leaves something to be desired, it is my purpose to suggest that [the planning and journalistic professions] may be equally at fault, equally responsible for the widespread uglification that goes under the name of Progress; equally responsible for the fact that so little of our new urban environment is pleasing to the eye, or satisfying to humanity's need to live where they can truthfully say, 'I like it here.'

"And if all this leaves so much to be desired, I would suggest further that a basic reason lies in our obsession—[planners and journalists]—with the *process* of planning, rather than with its end results, with its *products.* . . .

"The American press is doing a superb job of telling the public what

goes on. We lavish columns of newsprint on the negotiations for a redevelopment contract. We agonize for weeks, along with our readers, over questions of how many families, of what color and political faith, will be displaced by the next great 'project' carved into their old neighborhood.

**Mistakes need not be repeated**

"But we seldom, if ever, take the time to go back after it's all done, and take a long, hard look at the results. We are great ones for saying 'What's done is done, and there's no use worrying about it.' This attitude also forestalls all reflection, any consideration that it might have been done differently or better. The critical eye in America is extremely well trained, sharpened, and put to good use in every other field but that of the physical-architectural environment. What large newspapers think of existing without a movie reviewer, without a book-review page; without periodic reviews of television, music, the worlds of painting, sculpture, the theater and opera? . . .

"Now, what do we—we of the press and you of the planning professions and commissions—what do we do with the end products of city plans: The interchange, skyscraper, throughway, pedestrian mall, shopping center, public housing project, the new City Hall, or those new benches which the Mayor bought last week to keep the downtown merchants happy? . . .

"Take the proposed new City-County Office Building (the eternal dream of the City Efficient embodied in glass and concrete, an effort to put into physical form the most unruly political entity in America). It first gets into print when your consultant turns out a 'quickie' perspective drawing to satisfy the voters who approved a Civic Center plan five years ago and want to see results. Next, another rendering gets published after the building has been redesigned because of increased building costs. (The Planning Commission has in the process been moved from the penthouse to the basement.) Finally, there's a great ground-breaking, and the city editor is forced to use another of those identical photographs of an oversized City Commissioner holding a chromium-plated shovel. And that is all. No further pictures until the building is remodeled, the architect is sued, or somebody demands the whole thing be torn down.

"The same is true of nonpublic buildings. They get into print under the same kind of circumstances, and then again when they burn down, get into bankruptcy court, are sold, leased, or otherwise handled as pieces of merchandise.

**A half-century of shudders**

"For a half-century or longer these great hunks of physical environment hover around us, protecting, delighting or offending us, each according to its means, to each of us according to our capacity. For a half-century that new building could remain an affront to the city's skyline; it could spoil a neighborhood, break into a handsome cornice line, overshadow a great and renowned structure . . . [and] produce thousands of subconscious shudders per day; might actually dismay and dishearten thousands of neighbors. . . . We are only beginning to realize that visual assault, as well as physical assault, is an anti-social act. . . .

"Every building and every plan began long ago, in the mind of a man, in a sketch, a theory, in a tradition, in a belief. Therefore it is up to you [planners] as well as the press, to *dig out the unspoken assumptions,* the root metaphors, the hidden biases on which emerging plans are based. Such as 'This neighborhood will always be black, so we may as well double the density.' When it gets into the planning document, this gets watered down into a phrase such as 'To be made available for duplex Negro occupancy.'

"When citizens come to protest this or that plan, your stock answer

appears to be: 'Well, it can't be avoided, there's no other way to do it.' (Among highway engineers, the answer becomes: 'Well if you're so smart, why don't you find a better route?')

"All over the country, citizens are learning that things they never heard about are 'inevitable' because of decisions they never learned about until it's too late. . . .

"Who keeps the batting averages of the players? In trying to weigh the results of city planning somebody's got to find out who the players are and how they're performing. (This gets harder all the time when the decision-makers are concealed behind, let us say, a tri-state semi-governmental corporation which meets in secret and announces decisions through vice-presidents in charge of public relations who can never give answers unless they're in the script.)

"In other words, what have these fellows done before—these fellows who are shaping our cities? It is a rare newspaper which asks, or tries to answer this question. . . .

**Make the choices clear**

"A major weakness in planning, it seems to me, is the failure of both planner and politician to tell the public what its choices are; and then to make clear recommendations wherever they can.

"These choices, I think, ought in every instance to be illustrated graphically—with sketches, airviews, photo-montages, scale models. I would even suggest the educational walk—a walk through a project area, down a proposed expressway route—with appropriate markers, so that people can actually see what's going to be done.

"As a reporter and editor, I have done my share of trying to translate the planner's zoning envelopes, setback requirements and land-use regulations into the English language. All I or my readers really needed was a picture, a scale model. . . . Too much of the planner's product is thrown at us as a *fait accompli.* If you provide visual choices, we publish them—and the public learns in the process. . . . The public deserves to be shown —ahead of time—what the dreams and schemes of planners and promoters alike will do to the public's environment. . . .

**What criticism can do**

"Which brings me to another question: What are the purposes of criticism in its broadest sense?

"First, to identify and kill off the weeds growing in our cities. The weed-killers include an honorable company: Jacob Riis, Lincoln Steffens in earlier days; Lewis Mumford, Catherine Bauer in our own day. . . .

"Second (and not in order of importance): To encourage good designers and their associates by singling out the unsung and unheralded examples of adventuresome planning, good design. Hidden away in your community and mine are wonderful examples of somebody's genius—a pocket of beauty surrounded by acres of blight; an oasis in an urban desert of ugliness; a well-turned corner, a magnificent view. Such urban treasures—often obscured by neglect—need to be singled out for praise, identification and imitation—whether on the new city plan, the gasoline company map, or in the newspapers, it doesn't matter.

"Third: To give the planner and designer a new and broader audience —if not appreciative, at least well-informed.

"Fourth: To translate to the planner-designer the reaction of his audience.

"Fifth: To help educate the consumer of urban design—the increasing millions of people living with the stuff coming out of the planners' pipeline —to the choices available to them." ("The Planner and His Critics," *Journal of the American Institute of Architects,* October 1960)

## THE CASE FOR AUTOMATED TEACHING

*Dr. Cook is a research psychologist with the National Institute of Mental Health.*

**Donald A. Cook**

"The transmission of learning itself has not changed appreciably for such a long time that educated people themselves may be surprised at the possibility of radically altering the teaching process. . . . Within the last six years a new development has occurred whose effects are now gathering increasing momentum.

"The development is based upon a fundamental modification in methods of instruction, which takes account of the findings and methods of modern experimental psychology and is aimed directly at the interaction of the learner's behavior with the subject matter of the course. The basis for the new approach—let us call it *programed learning*—was set down by Harvard's experimental psychologist B. F. Skinner. . . .

"Everything we know about the nature of learning suggests the importance of the following conditions: (1) the active participation of the students must be enlisted at each step along the way; (2) the material must be arranged and presented in a rational and cumulative sequence; (3) swift and effective tutorial appraisal must reply to each step the student masters."

The usual classroom, in which the teacher is responsible for say thirty students, is hardly suited to the realization of these conditions. "By an iron law, the greater the attempt to engage the behavior of the students through tests and exercises, the more time must be spent in the drudgery of correcting papers. At its very best, the time lapse between a student's effort and the teacher's confirmation or correction is still too long for maximal effect. Teaching in groups leads to compromises in presentation, group standards, bargaining relations with students, and the other ailments so familiar to student and teacher alike.

"Skinner's solution is, in a word, to automate education. Instruction takes place through a program, in which the student participates in the following instructional cycle: (1) he reads a small unit of information (exposition, definition, or example) which calls for a response on his part—by way of answer to a question; (2) he composes a response—for example, by filling in a blank or labeling a diagram; (3) he is informed of the correct answer while the relevant material and his answers are still in view; (4) he then advances the program to the next step.

"Such a method can be closely approximated by an ordered series of index cards whose front frame carries the instructional material and question, and whose reverse frame carries the answer. Instead of a text, the student works through a stack of cards. In fact, Skinner and, by now, many others have built a variety of mechanical devices to present the program, and these have several advantages. (These devices have been given many names; among them are: self-instructors, self-tutors, learning cyclers, and —the most widespread term, and also the one which has horrified the most

people—teaching machines). Such devices, which can be simply built and are about the size of a portable phonograph, have several windows and a handle, and house the instructional program on a long paper roll. The student reads the single exposed frame, writes his answer on the movable paper through an open window, then advances the program. The correct answer appears to view. In some models, the student's response moves under a window so that it cannot be altered. Certain other specialized models will not advance the program if the answer is wrong, while others, yet more specialized, shunt the student into special remedial programs if the answer is wrong. In many versions of the machine, an automatic tally is kept of right and wrong answers.

**Advantage of the machine**

"Programed learning *does* provide immediate return for the student at each step of the way. He knows where he stands at all times, and quickly enough for the appraisal to affect the behavior that produced it—rather than being merely a 'mark' to boast about or haggle over.

"The complete instructional cycle—material, question, answer, appraisal—can take place dozens or even a hundred or more times an hour, in a process in which teaching and testing are blended into one seamless process. . . .

"The student proceeds at his own best rate. The dull student goes more slowly, with lessened shame or anxiety, while the bright student is not held back. An objective criterion—mastery of the program—is again applicable to all, for each to attain in his own time. If a student is ill, he does not fall behind; and if he moves from one school to another, he takes his program with him. . . .

"What about mistakes? If they are recorded on the program, a teacher can inspect his record before a conference with the student, and thus know what the difficulty is in each particular case. Initiative in the teaching relation is thus returned to the teacher, who need not probe at random to discover the student's difficulty.

"If a given section of a program generates errors in many students, there is something wrong with the program. It can be corrected by rewriting the frames or inserting additional frames to 'thin out' the material. Thus the very device which provides feedback to the student also provides feedback to the instructor. Perhaps the most exciting implication of programed learning is its effect on the product of education—knowledge itself. For the first time a means is available to produce permanent records of behavior in interaction with instruction and, it is clear, a repository of instructional culture will rapidly develop. Open to modification on a trial-and-error basis, with 'storage' of the results of these variations, the evolution of programs will be extremely swift. The prospect opens up that as knowledge grows, instructional methods will develop apace. Such records will constitute a library for the educator, both of his own subject matter and of the cultural process of its communication. Exposed to instructional achievement in his field, and aware of a medium for its communication, he will be motivated to contribute variations and improvements. The sophisticated mastery of educational skills may take a great leap upwards.

"If programing can evolve into a powerful technique, one of the specific consequences may be that a student can work through a program to mastery with a minimum of errors—in the limiting case, none. To proclaim such an ideal is disturbing to many, especially if their own education has been hard won, but it is a possibility with several points to recommend it. Studies of many kinds have shown that the best students are also the most

rapid learners, make the fewest mistakes, and retain their skills the most securely. Apparently mistakes and suffering are not now at the heart of effective education. It must be emphasized that a possible science of programing only *begins* with a specification of the material to be learned. Programing entails not only 'breaking material into small steps,' but also applying principles of behavior to the design of the sequence of steps. We want to make sure that the student eventually makes the right response for the right reasons—has not learned by rote, will not misapply general rules, and so on—but the process of building this effective repertoire represents an untouched frontier. Early research in this area has already uncovered a number of exciting leads, and they are of interest not merely to program technicians. The step-by-step analysis of the process of dialectical development which grows out of constructing 10,000 frames for a one-semester course may be of interest to philosophers as well. . . .

"There is no doubt that programed learning is effective. It breaks open the bottleneck of the student-teacher ratio which is of such critical dimensions in education today. Traditional humanists express concern which seems to blend the prophecy that 'it won't work' with the fear that it will. Nobody expects teachers to be replaced, yet there is uncertainty as to how their roles may be altered in the new situation. The evidence so far is that effective programing makes for *more* creative students, and the teacher may rightly suspect that his status-giving control over his subject may be challenged. The sober evaluation of the limits and optimal conditions governing the place of programed learning awaits careful research.

"Certainly a revolution is taking place in the relation between the creation of learning and its dissemination to 'consumers.' It is conceivable that more efficient methods of dissemination may allow a natural hierarchy of function to re-establish itself, with beneficial results in all quarters of the educational enterprise—knowing, discovering, teaching, and learning." ("Programed Learning: A Revolution in Instruction," *Graduate Faculties Newsletter,* Columbia University, November 1960)

## TOO MUCH RESEARCH?

*Mr. Russell is president of The John and Mary R. Markle Foundation, which gives grants in the field of medicine. (See also* Current, *July 1960, page 15.)*

**John M. Russell**

It is the unrelenting pressure put on our scientists to produce that "has overstimulated medical research, that has encouraged work on marginal projects, that has supported men of doubtful ability and has given a boost to the status seekers in medical science. . . .

"Much of the work being done and the papers that are published are done and published for the wrong reasons: because someone had too much money to spend; or because a government official had to dispose of all the appropriated funds within the fiscal year; or because someone forced someone else to work in an area not of his own choosing; or because someone found it easier to drift along on fellowships than to strike off on his own; or because a practitioner thought it would 'look good' if he did some research; or because an assistant professor needed 'to publish' to get a promotion; or because of a thousand other reasons irrelevant to the advancement of medical knowledge. Shoddy reasons for doing research tend to produce shoddy research." (*1959-60 Annual Report,* The John and Mary R. Markle Foundation, November 1960)

## CONCENTRATING CATHOLIC RESOURCES

*A history instructor at Hofstra College, New York, suggests emphasis on Catholic secondary education.*

**John C. Moore**

"To keep all Catholic children, from six to twenty-two, in Catholic schools, without being a trifle ashamed of the results, is a high ideal, perhaps too high in view of the growing shortage of teaching religious and the rising cost of maintaining two complete educational systems, public and Catholic. Faced with these difficulties, perhaps Catholic education should pursue its objectives somewhat differently. Without necessarily abandoning any part of the system as it now exists, perhaps Catholic education should rely more on publicly supported schools for elementary and higher education while seeking the goal that every Catholic child should go through a Catholic secondary school. . . .

"If some of the money and energy that would go into expanding our school system went into educating parents, providing them with necessary aids for religious instruction, and impressing upon them that the religious education of their children is the parents' right and responsibility, then perhaps the net gain of such a new direction might be greater than the loss. Parents are no longer illiterate; it need not be assumed that they are incapable of such a task. And the ideal of a family-effort at education, education carried on by parents and older brothers and sisters and augmented by the aid of religious who could be freed from the responsibility of giving a complete education to all Catholic children, is one no less worthy than the ideal of every Catholic child in a Catholic school.

"To make an essential distinction between elementary and secondary education is, of course, somewhat arbitrary; but . . . high-school students are at a most impressionable age, are frequently looking beyond the home for adults worth imitating. Decisions of great importance are made in high school, decisions calling for counsel that cannot always be provided by parents and that cannot be provided by those blind to the life of grace. But since the value of Catholic secondary education hardly needs demonstration, perhaps we should consider the problems on the level of higher education. . . .

"Instead of multiplying campuses for Catholic colleges, instead of spending millions of dollars on more Catholic laboratories, more Catholic administration buildings, more Catholic gymnasiums, and more Catholic parking lots, why not use some of that money to establish centers of Catholic Studies, staffed with competent Catholic theologians, on or near every state-supported campus, and perhaps even on or near some private campuses? The Newman Clubs already provide the seeds. . . .

"The financial advantages of accepting this new direction for Catholic education are obvious, but a variety of other happy results might be expected as well. Besides uniting the family in a common effort to learn (and, as any teacher will testify, parents will learn doubly well if they are learning in order to teach), this program might ease friction between

Catholics and non-Catholics over state expenditures on public education, especially in areas where Catholics have been charged with sabotaging the public school system by consistently voting against such things as school-bond issues.

"Further, the quality of Catholic elementary schools and institutions of higher learning should increase immeasurably, once they are relieved of the responsibility of accommodating all Catholic students. With the concentration on secondary schools, those teachers presently in our colleges and universities who are better suited for high school education could be shifted to that level, to the benefit of both levels and of the teachers themselves. The religious in all phases of the Catholic school system who have become teachers in the first place out of obedience, or out of a sense of pastoral responsibility which is sometimes mistaken for the aptitude or capacity for teaching, could devote their energies to tasks better suited to their talents and interests. And funds previously used for physical expansion could now be used to improve the caliber of teaching on all levels.

"In brief, Catholics might be delivered from the temptation to sacrifice the quality of Catholic education for the quantity. And, not least, the presence of Catholic thought on non-Catholic campuses would not only accommodate the Catholics there but would also contribute to the communication between the Catholic and non-Catholic intellectual communities which has been in the past, and would again be, to the great advantage of both." ("Quantity and Quality," *Commonweal*, Sept. 23, 1960)

## PUBLIC SUBSIDIES FOR PRIVATE EDUCATION

*An associate professor in the general program of the University of Notre Dame argues that schools are only one of the many means of education and that all should be subsidized.*

**Willis D. Nutting**

It is a false assumption, widely held, that "what is learned in school 'counts' and what is learned elsewhere is in some way below par. . . . The value must be put on what is learned, not where it is learned. . . . If parents can teach their children to read and to write, to pray and to figure, they should be urged to do so. Mature people should be asked to constitute themselves adult friends of children in the neighborhood. If children can teach other children something of value, their teaching power should be used to the full. All of the great educational potential existing among us should be made use of," including education through work.

"When there are changes in our ideas of education, then there must be corresponding changes in the laws. The fundamental laws which support the present conception of education are the laws compelling attendance at school. Never was there a system of laws with more noble intent. But few laws have had results more questionable. . . . The laws were intended to prevent greedy fathers or employers from keeping children out of school for their own selfish ends. But the laws have actually forced hundreds of thousands of children into a concentration camp for some of the most formative years of their lives."

These laws must be revised. Supervising authorities should have power to see that every child is being educated, "but some would be learning at school, public or private, some at home, some under private tuition, some at work, some on vacation, and it would allow none of the means of education to crowd out the others. And financial help could be given to all these means of education." (*Schools and the Means of Education*)

# THE FUTURE OF AGRICULTURE

## OVERALL GOALS

*A study prepared for the Conference on Economic Progress under the direction of economist Leon H. Keyserling recommends a "Prosperity and Peace Budget for Agriculture." Members of the Conference include Murray D. Lincoln, James G. Patton and Walter P. Reuther.*

**Conference on Economic Progress**

The proposed budget would be "devised under methods compatible with those contemplated for the general economy under the Employment Act of 1946. In the form of such a budget, the President would send to the Congress annually a program for farm adjustment looking five and ten years ahead, accompanied by recommended policies to achieve these adjustments.

"The maximum production goals contained in the Prosperity and Peace Budget for Agriculture would include, for all important farm commodities, estimates of production requirements consistent with (a) the real needs and purchasing power of domestic consumers and industries under conditions of maximum production, employment, and purchasing power in the United States as a whole, including a Model Food and Fiber Consumption Family Budget designed to lift all American families to a satisfactory health and adequacy standard of food and fiber consumption, (b) export levels of foods and fibers conducive to maximum prosperity for domestic agriculture and to maximum utilization of our farm output toward reducing the food and fiber deficits in the underdeveloped free world, and (c) adequate reserves of foods and fibers and biological oils, geared to domestic needs, national security, and the world-wide situation.

"The maximum employment goals for agriculture would project (a) a farm population and labor force of a size enabling it to be fully and efficiently employed in producing a volume of output consistent with maximum production, (b) opportunity for maximum employment, in other sectors of the economy, for those farmers and farm workers who may become in excess of those required for maximum employment in agriculture, and (c) a farm structure, in terms of numbers of farms, acres, and other productive units in use, consistent with maximum production, thus bringing annual supply and annual demand into balance. These goals would include encouragement of the family-type farm.

"The maximum purchasing power goals for agriculture would embrace as their objective (a) farm family income moving upward at sufficient pace to attain, within a reasonable period of time, parity of income and living standards with nonfarm families, (b) total farm income consistent with its essential role in helping to maintain maximum purchasing power for the American economy as a whole, and (c) ample farm credit on satisfactory terms.

"These goals would also include estimates of other factors bearing upon relatively low incomes and living standards in rural America, such as deficiencies in health services, educational facilities, and housing, accompanied by estimates of the approximate role of national policies and programs in

helping to overcome these deficiencies consistent with other policies and programs of the Federal Government in promoting the objectives of the Employment Act of 1946.

**A budget for agriculture**

"The Prosperity and Peace Budget for Agriculture would also include (a) estimates of proposed outlays as they enter into the Federal Budget, (b) estimates of net costs to the Federal Government, based upon the difference between proposed Budget outlays and estimated recoveries of funds by the Government, (c) a classification of overall outlays and net costs which distinguishes among transfer payments which redirect the flow of income but do not thereby consume economic resources, other outlays supporting activities which (while useful) do not create productive assets, and still other outlays of an investment character which create productive assets; these classifications would be designed to portray more accurately the real costs and benefits of national farm policies and programs, (d) estimates of what portion of proposed outlays have as their primary purpose the accomplishment of our international objectives or the betterment of living standards among nonfarm people in the United States, and which therefore should not be charged against agricultural adjustment nor against the protection of farm income, and (e) estimates of the impact of the whole farm adjustment program upon maximum production, employment, and purchasing power in the overall United States economy, in order to set off the economic and financial benefits of achieving the purposes of the Employment Act of 1946 against the costs of the farm adjustment program.

"The Prosperity and Peace Budget for Agriculture would include steps to be undertaken by the President, or proposed enactments by the Congress, to promote (a) cooperation among farmers, farm organizations, and government at all levels, towards maximizing voluntary efforts, (b) coordination among the various Departments of the Federal Government whose activities relate substantially to the farm problem, and (c) coordination among the various United States agencies concerned with international economic policies, and further measures towards improvement in workable relations between the United States and other countries, working through existing or new international agencies concerned with mutually beneficial economic exchanges among nations.

**Possible results**

"The improved management which should result from the new approaches recommended in this study could yield these interrelated results:

"1. With a maximum rate of overall economic growth in the United States, improved distribution of national income, and specific programs to bring all of our families up to a satisfactory American standard of diet, total U. S. consumer outlays for farm products would rise above the 1959 level by more than 20 per cent by 1965 and 38 per cent by 1970.

"2. Exports of American farm products to those underdeveloped countries in the free world where most of the people now go hungry—countries now embracing about 850 million people—would rise enormously. Compared with the 1955 level, wheat exports could be more than 300 million bushels higher by 1965 and more than 600 million higher by 1970. Soybean oil exports could be up more than 400 million pounds by 1965 and more than 900 million by 1970. Dairy products exports (milk equivalent) could be up more than 14 billion pounds by 1965 and remain at about that level in 1970. Cotton exports could be up more than 2 million bales by 1965 and more than 4½ million by 1970.

"3. With these expanded domestic and export uses, and even with

allowance for the new farm technology, functioning units of production (acreage or livestock breeding units) would in the case of eggs, milk, and soybeans need to rise above the 1958 level in amounts ranging between 13 and 19 per cent by 1965, and between 14 and 32 per cent by 1970. Cotton acreage would need to be lifted about 10 per cent by 1965 and about 20 per cent by 1970. Livestock breeding units in the case of beef would need to be increased about 24 per cent by 1965 and about 34 per cent by 1970. In some other instances, acreage would need to be substantially reduced. For example, wheat acreage would need to be reduced to about 8 per cent below the 1958 level by 1965 but should approximate the earlier level in 1970. The farm population might well decline from about 21 million in 1959 to about 20 million by 1965 and by another half million or so by 1970, while over the same period of time farm employment might decline from about 7½ million to less than 7 million.

"4. With these improvements in the management of the farm supply, with other specific programs to improve farm income and a full prosperity program for the nation at large, per capita farm income from all sources, averaging $965 in 1959, should rise to $1,860 in 1965 and to $2,577 in 1970. In the latter year, this would bring per capita farm income to more than five-sixths that of per capita personal income for the total U. S. population, contrasted with less than 50 per cent in 1959." (*Food and Freedom.* Available through Readers Service)

## A RURAL WELFARE PROGRAM

**The New Republic**

"Half the [farm] problem is essentially a rural welfare problem that has never been met on a scale proportionate to its importance. A minute attempt to deal with the welfare needs of farmers, the Rural Development Program, is now operating on an allocation of only one-thirtieth of one per cent of the total Department of Agriculture budget! Nor is the shortage of funds its only trouble: its field personnel is drawn from the Extension Service of the Department, which has always had a commercial-farming orientation. Other ways of dealing with the problems of noncommercial farmers are required:

"1. For people who have the basic farm management skills and the desire to build up their own farm enterprises, increased credit might be made available through liberalization of the regulations of the Farmers Home Administration. Such loans could be applicable to purchases of additional land as well as the improvement of existing acreage and buildings so that farm units of economic size may be developed. . . .

"2. The younger rural population who see no future for themselves in farming should be helped to make an orderly transition to nonfarm occupations. There is a serious lack of vocational education facilities in rural areas to prepare young people for jobs in the distributive trades, office work, automobile repairing, carpentry and so on. . . .

"3. Coincidentally, the dispersal of industry in such areas should be energetically undertaken, in the interests of national defense as well as rural development. The existing area development study group in the Department of Commerce could be expanded to provide plant location services. With a specific appropriation from the Congress and a few organizational revisions, the Small Business Administration (which already cooperates with the Rural Development Program) can offer a more effective credit service to help establish and expand rural enterprises." ("A More Rational Farm Program," *The New Republic*, Dec. 5, 1960)

## ON THE MANAGERS

*Dr. Anshen is a professor of industrial administration at the Carnegie Institute of Technology.*

**Melvin Anshen**

"How broadly will the new mathematical techniques being introduced into business spread across the decision-making functions of management? How rapidly will these techniques take hold? Will they become factors of major importance in five years, ten years, or some longer period?

"Will the jobs of middle managers be substantially taken over by computers, as some experts have predicted?

"Will computerized decision-making end or reverse the trend to decentralization?

"How should organization structures be amended to provide the most favorable environment for the new decision-making procedures?

"What are the implications of the new technology for managerial functions, the relations of line and staff personnel, the training and growth of future executives?

"Will the technical specialist dominate the administrative world in the forseeable future?"

The answers to these questions suggest that the new decision-making technology will enrich rather than shrink the role of executives at the middle as well as the top of management's hierarchy.

"1. Change will not proceed as fast or as far as some enthusiasts have been claiming. The new technology will change the *content* of many management jobs, particularly in the middle ranks where the structured types of decisions have tended to cluster. But the changes, occurring over the next two decades, will not erode or destroy the jobs. Instead, they will present opportunities for extending management capability and performance in areas which have often suffered from scant attention—the so-called 'unstructured' areas in which questions of what to do and how to do it call for imagination and insight. In general, middle management will be more, rather than less, valuable; it will be more, rather than less, demanding in its requirement for unique skills.

"2. The professional experts in the new approaches will occupy a position of growing significance in the organization and will have an increasing influence on the whole system of information processing and decision making. They will not, however, assume fundamental top-management responsibilities, and they are not likely to constitute a reservoir from which top-management personnel are drawn.

"3. The marked trend toward decentralization of decision making in large organizations will be slowed down and in part reversed. Responsibility for making structured and structurable decisions will be relocated at a central point where a programed computer will process highly organized inputs of information and produce decisions to be implemented throughout the organization. This development will not, however, lead to the abandonment of efforts to decentralize many other management

responsibilities—especially those that have been 'farmed out' from a central headquarters for reasons *other* than a simple desire to have problems decided by those people most immediately concerned.

"4. The tasks of middle management will resemble more closely, not less closely, the tasks traditionally associated with top management. Because of heightened concern with problem identification, decision implementation, and new opportunities to find solutions, middle managers will be top managers in miniature. They will have more occasions to exhibit their capacities, build on experience, and qualify for advancement.

"5. The most successful managements will act promptly to strengthen their understanding of the capabilities as well as the limitations of the new technology. Only in this way can they maintain the knowledge they need in order to apply the techniques successfully, use the new class of experts as a powerful administrative resource, and secure the appropriate and necessary balance between management as a science and management as an art." ("The Manager and the Black Box," *Harvard Business Review*, November-December, 1960)

## ON THE BLUE-COLLAR WORKERS

*The IAM's membership of 990,000 contains one of the largest groups of skilled craftsmen in the AFL-CIO.*

**International Association of Machinists**

Automation and technological change are "responsible in great part for the monumental shift from blue-collar to white-collar occupations. For example, at Boeing the ratio of white-collar workers to blue-collar workers has changed within the past 15 years from approximately 3 to 1 in favor of blue-collar workers to 3 to 2 in favor of white-collar workers.

"The fact is that the United States has become the first industrial country in the world in which the working class, as traditionally conceived, is no longer the major element in the labor force. In 1956, the number of white-collar workers exceeded, for the first time in history, the number of blue-collar workers, and there is every indication that the gap will widen in the next decade.

"Clearly, many now employed as production workers in manufacturing will have to transfer to other occupations and, in many cases, to sectors of the economy other than manufacturing, as will the new entrants into the labor force. Even if jobs are available elsewhere, a shift involves the problem of moving to areas in which the new jobs are located, training to acquire the skills required for the new jobs and establishment of pay levels for such jobs so as not to require a drastic cut in the standard of living.

"In a number of cases the adjustment may be exceedingly difficult. Some displaced workers, particularly older workers, will find it hard to adjust to the new kind of jobs, and minority groups may find their entry into white-collar occupations even more difficult than their entry into blue-collar occupations. . . .

"There is a great deal of evidence that the displacement of machine operators will be extensive and that the level of training and experience required for such work will not be greatly increased; it may even be reduced in some cases. The evidence regarding more skilled jobs is conflicting. While many experts believe that automation will require larger proportions of workers in the apprenticeable trades, others point out that automatic metalworking machinery achieves some of its most spectacular

savings by eliminating the work of highly skilled craftsmen such as tool and die and pattern makers.

"Some insist that automation will greatly increase the demand for skilled maintenance workers, while others raise doubts about the extent of such demand, pointing to evidence which shows that, after the initial 'de-bugging' period, skilled maintenance men are not required in any greater numbers in automated plants. . . .

"It may very well be found that by eliminating the routine jobs, automation has raised the skill mix but not the level of skill required for those jobs which remain. Such jobs may be changed but not significantly upgraded.

"The onward march of automation raises many other questions. As work becomes more and more a matter of joint effort and more and more machine-paced, will methods of wage payment be revised? Will workers be paid on a weekly salary basis as it becomes more difficult to isolate and measure and pay for small segments of individual effort? Will individual incentive systems disappear? Will group incentives become more common? Will greater efforts be made to bring maintenance crews into existing group bonus or incentive plans?

"Will work become more or less interesting in an automated factory? (Some British unions have already asked for 'lonesome pay' for workers handling automatic processes.) Will the new jobs be more or less fatiguing that the conventional ones? Will opportunities for promotion be more or less limited? . . .

**No moratorium on change**

"As serious as the problems which automation gives rise to may be, no responsible union leader has suggested that a moratorium be declared on technological change. . . . At the same time businessmen cannot be allowed to be carried away by the possibilities of cost reduction and to forget the social problems and personal hardships to which rapid technological change gives rise. . . .

"An expanding, growing, full-employment economy" comes first in meeting the challenge of technological change. "A comprehensive program should include:

"1) advance notice and consultation whenever employers plan major changes; (2) the right to transfer not only to other jobs within a plant but to jobs in other plants as well, with adequate moving allowances (covering, among other things, necessary living expenses and losses resulting from the sale of homes); (3) training for new jobs (or for old jobs which have not been eliminated) at full pay and no expense to the worker; (4) preservation of the previous rates of pay of workers who have been downgraded and of a substantial part of the income of those who have been laid off (either through supplemental unemployment benefits, severance payments or some other device); (5) provision for early retirement with assurance of an adequate pension; (6) continuation of insurance coverage and other fringe benefits during periods of layoffs; (7) negotiation of new job classifications and rates of pay wherever automation has increased skill requirements or responsibility or imposed additional demands upon the worker in other ways; (8) an equitable distribution of the gains resulting from the greater productivity through general wage increases, more leisure time or in some other socially desirable fashion. Certainly, demands for a shorter work day or work week should be pressed as vigorously and as rapidly as the needs and resources of the nation permit." (Recommendations adopted by the International Association of Machinists Grand Lodge Convention, St. Louis, Missouri, Sept. 13, 1960)

# *THE HUMAN USES OF SCIENCE*

*Each month* Current *publishes a document that seems to the editors of outstanding interest.*

*This month we publish verbatim extracts from an article in the December issue of* Commentary *entitled "The Human Uses of Science." Mr. Goodman is the author of* Communitas *(with Percival Goodman),* The Empire City, *and* Growing Up Absurd.

**Paul Goodman**

In the present round of the century-old debate between science and the humanities, the humanities are a weak opponent. They are not sure of what they are and they do not seem to have much of use to offer. Whereas science looms in the fullness of success; it has made new advances in theory and its technological applications have transformed the world. Yet the sad irony is that, perhaps just because our humanities are so weak, we have been losing many basic humane values of science itself. Having lost our firm credulity about what man "is" and what society is "for," we have become confused indeed about utility, efficiency, relevance, understanding. The usual admonitions that we must master the machine and become a truly scientific society are by now very impracticable. What would be the criteria of a scientific way of life?

It is not an academic question. In this essay I want to analyze two kinds of confusion that the scientific camp suffers from. There is a confusion between science and technology. . . . And there exists a confusion in both the popular and the scientific mind—though of course differently—between science and what has to be called magic and superstition. Now these confusions are socially disastrous. They cost us billions in social wealth, they damage backward peoples and retard their progress from poverty, they jeopardize our safety, and they distort the education of the next generation.

**Relation between science and technology**

There has always been an intimate and mutually causal relation between science and technology. Let me give only spectacular modern examples. It was a problem of navigation that first led to the momentous measurement of the speed of light. The study of thermodynamics, by Carnot, Joule, Kelvin, grew from experience of steam engines, was advanced by working on practical problems of steam engines, and led to discoveries in refrigeration. . . . At present the very word "technology" is used not so much to refer to practical arts as to the application of fairly up-to-date scientific concepts to the mass production of goods and services. It would be awkward to call carpentry "technology," and it would be wrong to call medicine "technology"; but wallboard, canned foods, ship-radar, or the manufacture—and prescription?—of penicillin, are parts of our technology. Marxist philosophers have insisted on an indissoluble relation, if not formal identity, between science and technology, and *in a background sense* this is true. Especially experimental

science would not much exist among peoples who lack elaborate industrial arts; they would not have the data, they would not have the techniques, and they would not believe it important. (But such peoples might be excellent naturalists and mathematicians, like the Greeks; and in social psychology, with its techniques of rhetoric and pedagogy, all peoples, of course, have plenty of experimental evidence—a point often overlooked.)

**Confusion between science and technology**

Yet it is dangerous to confuse science and technology. Confusion arises when contemporary science and the present stage of technology come to exist in people's minds as one block, to be necessarily taken as a single whole. And the effect of this is that rhetorical arguments for some kind or complex of technology, which indeed has been made possible by modern science, are unfairly strengthened by the moral excellence, the prestige, and the superstition of modern science itself. Contrariwise, anybody who opposes the mass production, the export to underdeveloped countries, or the widespread domestic use of certain machines or technical complexes or therapies, is sure to be "refuted" as an obscurantist, an irrationalist or aesthete, a pessimist or a Luddite. . . .

The criteria for the practice of science and the practice of technology are distinct. It is possible to affirm that the most absolute freedom and encouragement—including a blank check—should be given to the pursuit of scientific knowledge, and yet that the mass application of this knowledge to industrial arts, communications, medicine, etc. should be highly selective and discriminating, and even, under modern conditions, rather grudging in many departments and in many regions. . . .

My reasons for praising science are, of course, the classical ones, but let me spell them out for the pleasure of it. The pursuit of natural truth is a noble good that justifies itself, like compassion, social justice, fine art, or romantic love; no superior standard exists by which to limit such pursuits, even though the sky falls. The life of research is one of the forms of human happiness. The submission of the intellect to nature is a kind of humble prayer. The scientific habits are positive virtues; and, negatively, science is the chief antidote to illusion, prejudice, and superstition. The adventure of discovery is itself romantic and delights the animal spirits; conversely, any restriction of curiosity and inquiry very soon proves to be psychologically depressing and anxious-making, and morally disastrous, leading to trickery and lies. Sometimes we may fear that, like love, justice, or art, the discovery of truth is dangerous or inopportune; nevertheless we must risk it. . . .

**Criteria in using technology**

As soon as we turn to the technological applications, we have left the absolute and are in the realm of prudence and choice, we weigh and balance values, we try to take account of consequences, we realize that consequences are often incalculable. And yet—apart from the recent cases of the bombs and fall-out, some smoke control, and the traditional caution of medical men—there have been almost no criteria in this field beyond cost and marketability! On the contrary, the policy in advanced countries has been "as much as possible of all the latest things," and the policy in backward countries is now, "all of it, as quickly as possible." Yet these things determine our ways of life. Ideally we should pay the most serious attention to selecting each particular innovation and to con-

tinually reviewing the technology we have. At the least we should be ruthless in calling a halt to the further proliferation of those machines and their complexes that have demonstrably become ruinous, like the cars and roads.

**Criteria of utility**

Start with the criterion of utility. To examine it, consider the limiting case of Afro-Asian regions of dire poverty and drudgery, populous and industrially backward. What capital and technicians are useful for them?

The demand of the (Western-trained) leaders in these regions—it is hard to know what the *people* would choose—is to industrialize totally, on advanced Western models, as quickly as possible, and so attain the American standard of living. The policy to accomplish this may be to concentrate at once on heavy industry, steel mills, machine tools; or less radically, to devote part of the production to native goods for export, to build up a balance of trade. Either way, the policy means hard work without immediate rewards, curtailment of consumption, a stringent and likely totalitarian dictatorship both for work-discipline and for very long range planning, the corresponding increase of the bureaucracy, the enforcing of completely new work habits, the disruption of age-old community forms, occasional famines, sometimes the need to repress tribal revolts. Further, there is bound to be overinvestment in immense mistakes; nor would it be surprising if, at the end of the process, much has been created that is already outmoded, and even more that does not, after all, suit the native conditions, materials, and uses. All this could be documented again and again from the history of the industrialization of Russia, China, India, the Congo, etc., etc.

Surely this policy is an illusion sprung from a superstitious notion of what it means to be modern and scientific. Naturally it is abetted by foreign promoters who are interested in exporting pipelines, mining machinery, and paved roads. But also governments and international agencies, claiming to have only benevolent aims, willingly go along with it. Yet if there were no wish to make profits or wield political influence, it would certainly be more useful to restrict the import of technology specifically to the maximum mass production of basic subsistence—food, clothing, shelter, and medicine: to give as soon as possible a self-supporting livelihood. And otherwise hands off! This would be a far cheaper gift, and in the long run would be a safer investment. People would be better off almost at once and then could think up the advantages that come marginally next in order. They could make their own community adjustments to the new conditions. In the production of subsistence there cannot be great mistakes, for people know the values. Less prior training is required. Less is wasted on politicians and policemen; it is more difficult for grafters to take their toll. People come to a higher standard according to their own style and choice and therefore can develop a living culture. And the relation of means and end is fairly direct, so people are not mystified....

If we turn, next, to our own, the most advanced country, the need for selection is even more obvious, though less drastic. It is now generally conceded that much of our production and consumption is useless, of poor quality, wasteful and demoralizing (although *economically*, let us remember, 30 per cent of our people live in hardship)....

**Criteria of efficiency**

Efficiency, among us, tends to be measured solely in terms of a particular machine (e.g. gasoline per mile) or in terms of a particular complex of industrial operations (e.g. using the by-products). But if we look at our production more philosophically, in larger wholes and more remote effects, we see that some of our most cherished technical assumptions lead to inefficiency. For instance, by the evident principle that as the unit-cost of production falls, the unit-cost of distribution rises, it is likely that much of the vast technology of food processing and transportation is inefficient. Back in the Thirties when times were harder, Ralph Borsodi showed experimentally that, using domestic electrical apparatus, it was cheaper in hours and minutes of effort to grow and can one's own tomatoes than to buy the national brands—not to speak of the quality; other items (e.g. wheat and bread) were cheaper not on an individual but on a small cooperative basis; and still other items were cheaper maximum-mass-produced and nationally distributed.

My conclusion is not that we ought to produce every item in the most efficient way—we have a surplus and it is not necessary for us to be that efficient—but rather that, since our economists do not habitually make this kind of accounting, our national housekeeping has become slovenly. Because of our slovenliness we fall in bondage to the supermarket and cannot get a cooperative movement going as in Scandinavia; and therefore the quality of our goods is inferior to the Scandinavian.

Similarly it can be demonstrated that, except in highly automated factories where labor cost is small compared to fixed capital, or in heavy mining attached to its site, for the most part large industrial plants and concentrations of industry are less efficient than smaller ones that assemble parts machined in small shops (e.g. it is cheaper to transport the parts than the workers). Certainly in the layout of our cities, almost any kind of neighborhood plan and community-centered production would be far more efficient than our suburbs and commutation. A more human-scaled production has obvious political and cultural advantages; it allows for more flexible planning, it is more conducive to scientific education and invention. We complain of the deadening centralism and conformity, and we put up with them because they are efficient. But they are inefficient.

**Comprehensibility and repairability**

We hear rhetoric on the theme of learning to master the machine lest the machine master us. Let us consider a couple of criteria for the selection of technology and the users of technology, that directly address this problem. If possible, the operation of a machine should be transparent and comprehensible to its users. This can be aided by the design and casing of the machine and the education of the users. Consider the important corollary that a machine ought to be repairable by its user. Our present plight is that, in the use of cars, telephones, electricity and gas systems, radio equipment, refrigeration, etc., etc., the mass of people are in bondage to a system of servicemen for even trivial repairs. The servicemen notoriously take advantage of the situation, but much worse is the increasing tendency of the manufacturers to build obsolescence and non-repairability *into* the machinery. (This is a negative criterion indeed! But it is inevitable that a caste possessing mysterious knowledge will shear the sheep.)

Psychologically, we have developed an anxious climate in which we don't know how to buy because we can't judge quality. It would be very different if we began to introduce the convention that a consumer must learn to take apart a machine and know how it works, before he is permitted to buy it—much as some of us still frown on an adolescent who cannot fix his broken bicycle. . . .

Fifty years ago, the twin ideas of progressive education (learning by doing) and functionalism in planning and design, were matured to meet just this problem of making people more adequate to their new technological means, and of molding the new means into a shape and style more able to be grasped by people. Both movements were criticized as antihumanistic, as abandoning classical education and traditional canons of beauty. But their principle was precisely humanistic, to reintegrate the new scientific specialism with the common intellectual and moral life. . . .

Patrick Geddes was a champion of those twin ideals of fifty years ago, and he also advocated a selection of technology. He was in the moral tradition of Ruskin, but himself a scientist and friendly to science. Geddes imagined that history was on his side, for the "neo-technology" of electricity had come to replace the "paleo-technology" of coal and steam. Electricity satisfied the criterion of cleanliness, so that we could reject the ugly black concentrations of the nineteenth century; and it was easily transmissible to give ubiquitous sources of power, so that we could either reject concentration altogether or choose it for nontechnical purposes, e.g. for the culture of cities (the phrase is Lewis Mumford's). Some of what Geddes hoped for has come about; but on the whole the "forces of history" have not given good planning, in the absence of positive political and moral selection. And by a melancholy irony—history is good at creating melancholy irony—some of us followers of Geddes wryly praise the hideous old slums over the neo-technological slums, for they had more human scale and pullulation of life.

**Uncritical applications**

Finally, consider some uncritical applications of science in biology and psychology. The most obvious illustration is the craze for antibiotic drugs. These have been mass-produced and promoted—with a simply fascinating lack of reduction in price—with a now conceded disregard of the organism as a whole. A powerful therapy, indicated for emergencies (e.g. for a dangerous mastoiditis), is used for a quick cure of minor or systemic infections (and a child so treated for numerous earaches may wind up deaf). Or, central-system sedatives and tranquilizers are administered that bypass malnutrition, bad living habits, and bad environment.

Meantime, the scientific "untechnological" tradition of medicine from Hippocrates on—diet, exercise, natural living, airs, and places—is quite neglected, and the crucial factor of resistance to disease, the profoundest secret in medicine (just as prevention is its glory), is not studied. Instead, mass-immunity to a host of particular symptoms is the sought-for goal, although almost certainly the optimum possible health of each individual organism is being sacrificed. But the aim of medicine is not, as such, to increase the average life span of a population—a person can be kept alive as a vegetable for years—but to foster the quality of life. If we

want a single word for the criterion of selection here being abused, it is, perhaps, relevance to the thing being treated.

The irrelevant application of technology to psychology is too rich to cope with, it would carry us away. Let me simply mention a few typical items. Dr. Skinner of Harvard has invented a machine that is useful for investigating responses to stimuli, so it is now at once proposed to mass-produce it as a teaching machine, although it is quite irrelevant to the chief factors in either teaching or learning. Or, a new computer is installed in Iowa that can score millions of standard tests in practically no time at all, so my boy's class is interrupted to take these tests, and I predict that the curriculum will be subtly modified for the convenience of the scoring. Or, in a town in Maine a well-financed research project, involving seventeen variables and plenty of work for the rented computer, discovers that boys tend to elect shop and girls tend to elect cooking; the author of the report comments, "We used to think that this was so, now we know." How shall we name the criterion that is here being violated?

Perhaps the needed criterion is modesty: to have as few of any machines, methods, products (and research projects) as possible. In any region the space is limited; the people are tending to multiply; but the machines and what belongs to the machines have multiplied still more, with overpowering effect. The bridges and roads are more impressive than the rivers they span and the places they connect, but they are less interesting. Most immodest of all, of course, are the techniques of communication that have cluttered up the void and silence with images and words. It is now the rule that books are written to keep presses running, and the more radio channels we tap, the more drivel will be invented to broadcast.

Thus I have touched on half a dozen criteria for the humane selection of a technology: utility, efficiency, comprehensibility and repairability, ease and flexibility of use, relevance, cleanliness and elegance, and modesty. These criteria are esteemed by scientists and engineers; they are common ground between science and the humanities; they do not entail any conflict. Why are they not generally evident in our "scientific" society? I have purposely chosen only large and economically important examples: the type of foreign aid, the planning and distribution of cities, the organization of production, the American standard of living and public health, the methods of education. To repeat, the question of humane criteria in scientific technology is not an academic issue.

**Rhetorical criteria**

Return now to the thread of our argument, the confusion of science and technology and the powerful rhetoric of referring to them as one block. This rhetoric becomes explicit when a group that is interested in promoting a particular technology is opposed. Thus the big drug companies, being investigated for their outrageous pricing and monopolistic stifling of small competitors, have righteously exclaimed that without their methods of mass production and promotion and pricing, scientific research comes to an end—there will be no more Listers and Pasteurs! Equally farfetched is the uncriticized assumption of all the large suppliers of scientific technology that they alone are the right sponsors, champions, and entrepreneurs of scientific thought and research: this

gives them the license to raid the universities for talent, to fill the public schools with their brochures, to influence the appropriation of school funds, to get tax exemptions for "scientific" foundations that are really parts of the firm, and even to dictate the lines of further research and sometimes actively to discourage "unprofitable" lines of research. In foreign aid and the export of capital, firms that have equipment to sell, and materials and fuels to buy, are wonderfully persuasive about helping backward societies to become modern scientific societies. The Pentagon also is an enthusiastic advocate and underwriter of pure research—though not especially on the genetic effects of radioactive fall-out.

For a couple of hundred years, our proliferating technologies have been selected on the criteria of marketability and profitability, and by and large the market has had some regard for usefulness and efficiency. . . . In the past fifty years, however, new conditions have developed that are unambiguously harmful. There has been systematic corruption of the public notion of what *is* useful. (An early typical example was the campaign that put across bleached flour as tastier and more "refined," since it spoiled less in the grain elevators.) The growing public ineptitude and ignorance, and a growing mystique of technical experts, have made any rational restraint difficult. And finally, by an inevitable reflex, the stream of science itself is channeled and hampered by the too abundant technology that it has created. . . .

**Science and the humanities**

I myself have never been able to distinguish between "science" and the "humanities"—perhaps this is *my* blind spot. The reasons for the absolute autonomy and even pre-eminence of science, that I listed above, are all humanistic reasons, they are what belong to a whole, free, risky human existence. The moral criteria for selecting and refining an industrial society, that were listed above, are common to scientists and humanists, they are philosophic. If scientists do not think in these terms about technology, it is that they have lost touch with common sense; if humanists do not think about technology at all, it is that they have become withdrawn and therefore stupid.

But finally—and this is a point that most scientists and many modern literary critics are singularly unaware of—the chief content of literature is itself scientific, it is the worldly wisdom and "criticism of life" of good observers who, *in the field of human relations*, had plenty of empirical experience. If the classics of literature do not state summary propositions like studies in sociology and psychology, but rather have the complex density of poems and plays, it is because the subject matter of human conduct requires this density of statement; it is notoriously missed and distorted by less concrete language. The interpretation of literary statements is the job of humanists, using the tools of historical criticism, linguistics, poetics. Certainly it is a subtle, difficult, and often vague business; but I don't suppose that anybody in his right mind ever thought that the science of man would be less complex than physics or biology. . . .

In my opinion, science has become a superstition for both the mass of the people and the scientists. For the mass it has the power of magic. For the scientists it has the exclusive virtue of an orthodox theology. . . .

We have poor memories and we no longer keep in mind that Christianity, at least, thrived greatly by its sacramental magic, its relics, and

its miracle workers; and its present lapse is owing to the brute fact, that over several centuries, it has been defeated by experimental science in a frank and fair contest of miracles and wonders. Science has worked better against plagues, and it has proved to be immensely better at flying and distant communication. As late as the Russian Revolution, a means of trying to defeat Christianity was to take a moujik up in an airplane and prove to him that God wasn't in the sky after all. (Let me say, moreover, that the fields where Christianity still has pretty good hold of the souls of men are precisely, conversion and peace of mind; for here, Christianity has a few fumbling techniques, like revivalism and prayer, whereas Western science knows nothing and resists learning anything. But the Eastern technologists have invented brainwashing.)

**Science and magic**

Our hope was, during the Enlightenment, to dissolve all magical fears. Tyrannies and castes were undermined; religion was refuted; progressive education began to be invented; and the claims of science too became more modest. [But] for political, economic, and technological reasons, magical fears have not been dissolved. The specialist caste of wonder-workers has grown more specialist (and recently less modest), and the rest of the people more out of touch and inept. And of course, given the actual disasters that scientific technology has produced, superstitious respect for the wizards has become tinged with a lust to tear them limb from limb. . . .

In one respect the popular superstition of science is more desperate than the medieval superstition of the Church. For in the past, as counter-evidence to what the priest said, there was the tradition of scientific experience and natural philosophy, and especially every man's experience in industry and agriculture; but now it is just this kind of counter-evidence that is pre-empted by the experts. . . .

My argument has been that we live in a climate of superstition, where a dogmatic and obsessional caste of scientists imposes rituals on an ignorant populace living in a low-grade anxiety of magic. In this climate it is possible to proliferate without restraint a mass technology selected not on moral or useful criteria, but for the advantage of the powers that be. And these powers further exploit the scientists to the detriment of science.

What then do I want? What am I after? For the immediate future, four simple things. I want our scientists to dissociate themselves from the military that is abusing them and to appeal to their Russian colleagues to do the same, so we can have peace. They can and do communicate; and my guess is that an agreement among a couple of hundred of them *could* exert an effective pressure. I want the scientists to regard the development of the regions of poverty in the light of what is humanly advantageous for those peoples, with a less uncritical acceptance of our own technology as the ideal; and in our own country, to be more circumspect about whom they are working for, and on what. Finally, in the allocation of time and funds for education, I want the scientists to throw their influence on the side of a course and method of education that will break down the barrier between science and the humanities and begin to dissipate the climate of superstition, instead of the present proposed program of apprentice training, which will make it worse.

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